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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

102

UNIVERSAL FREQUENCY
TRANSLATION (UFT)
MODULE

PORT 3

CONTROL
SIGNAL
FIG. 1 A

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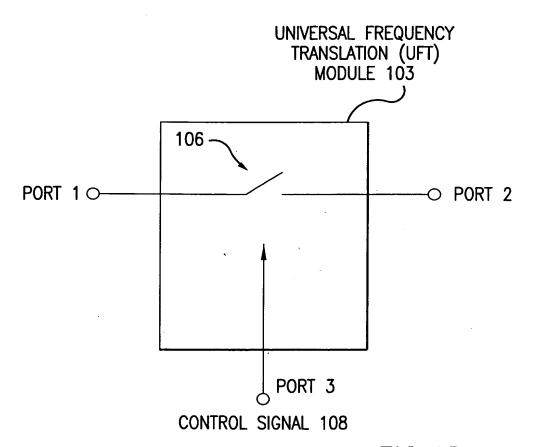
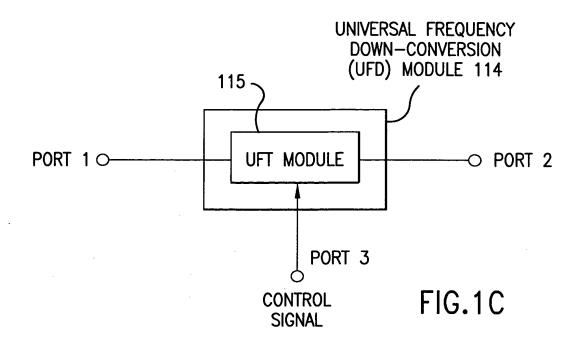
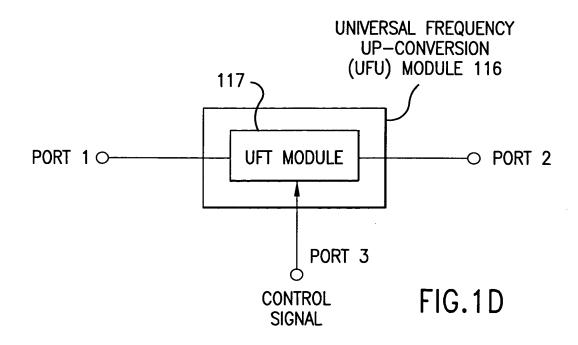


FIG.1B

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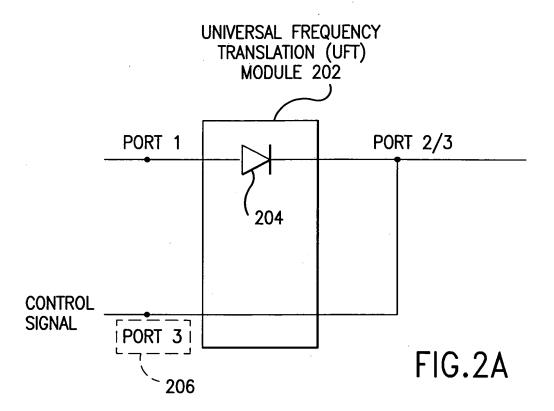
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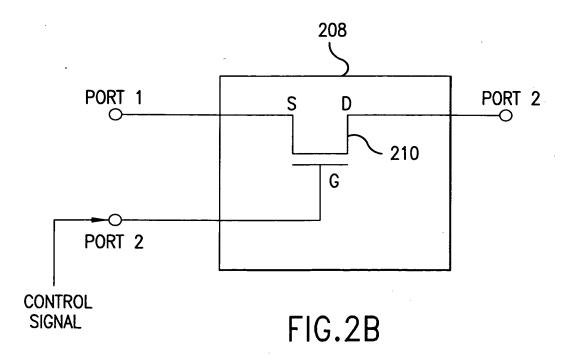




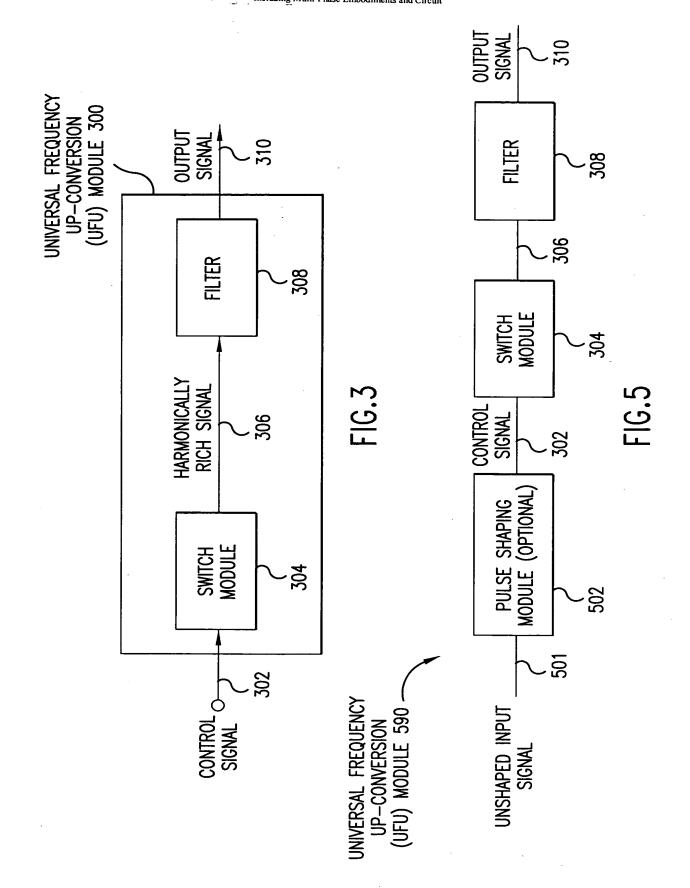
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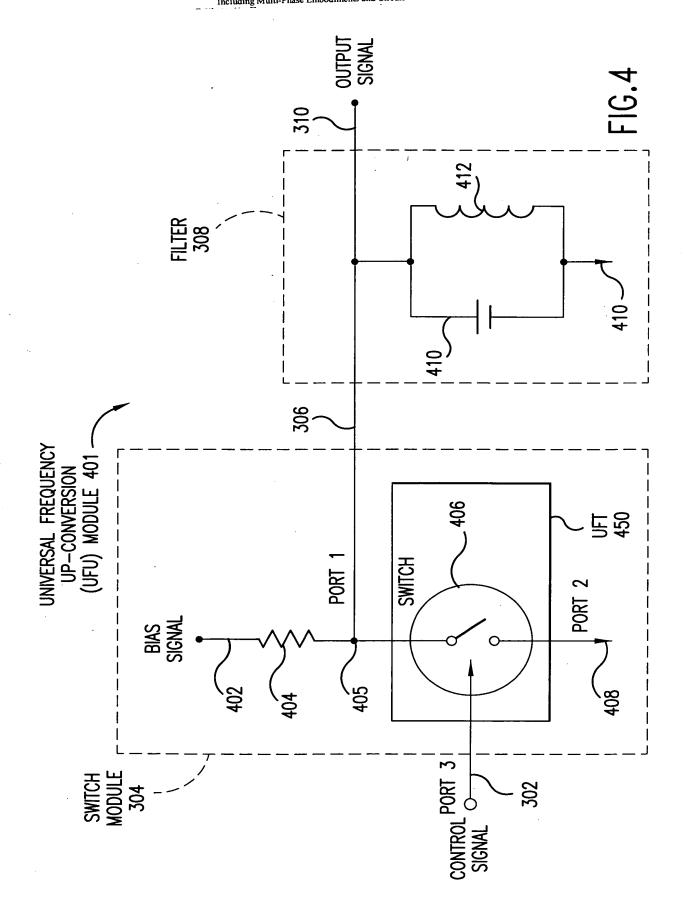


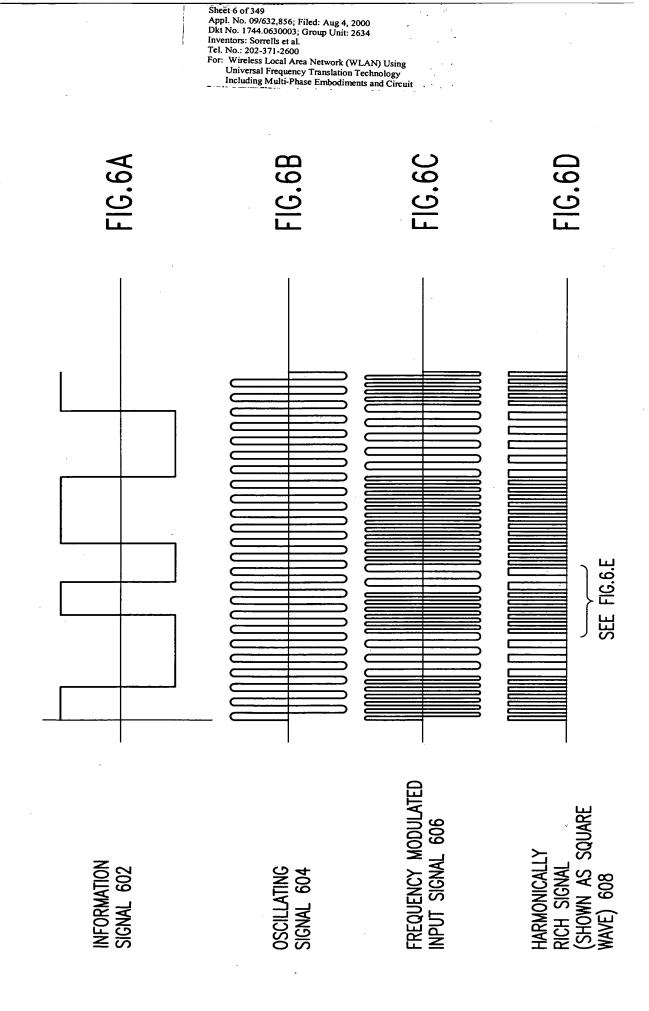


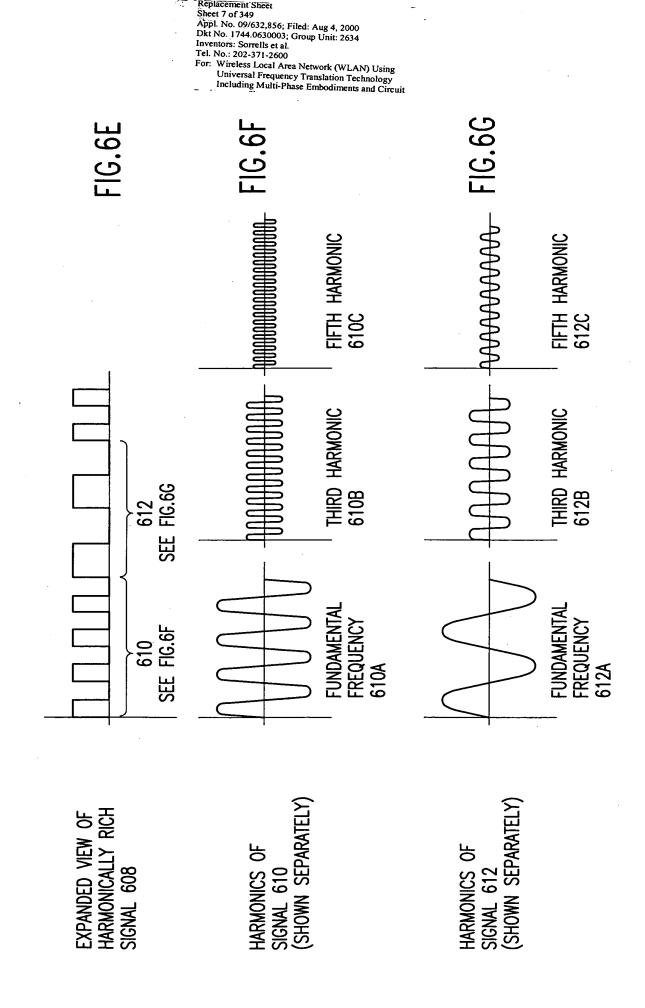
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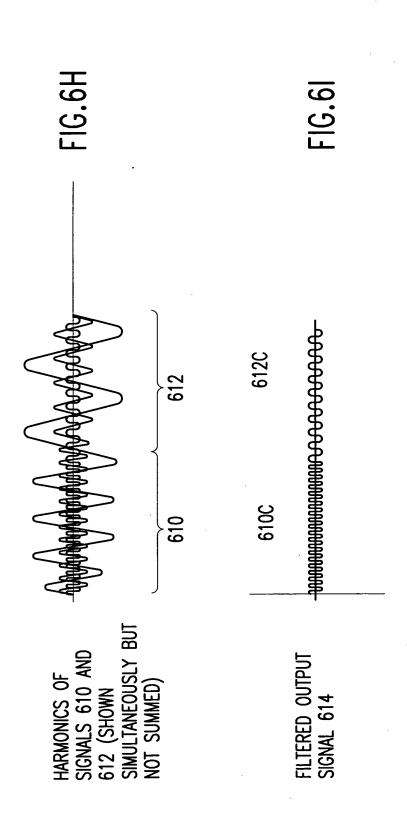




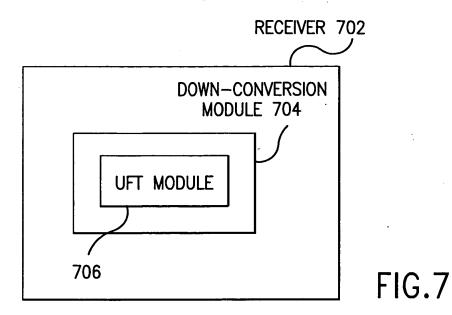


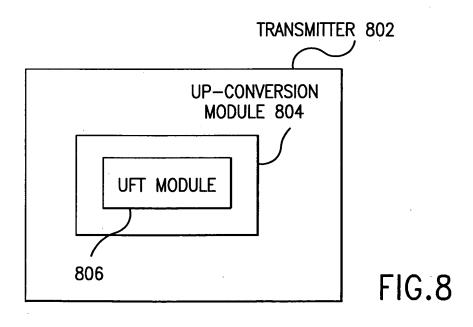
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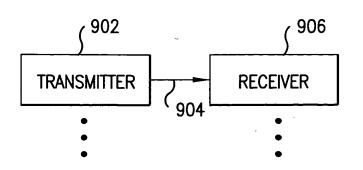
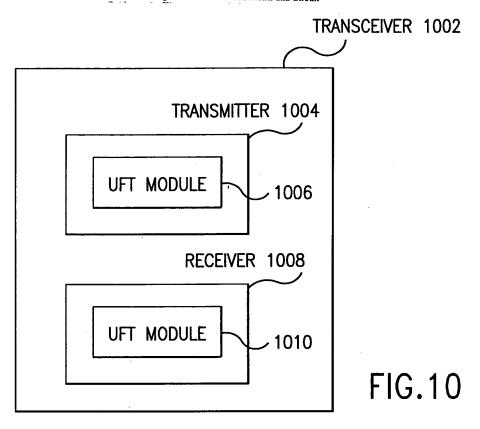
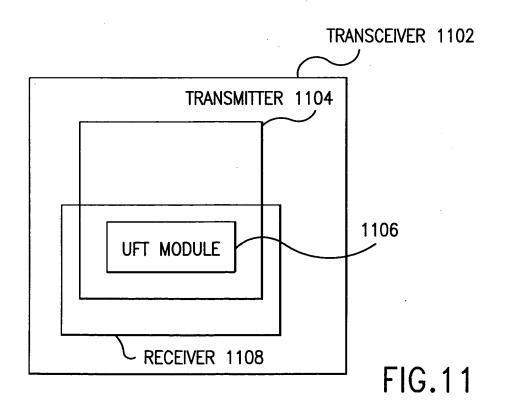


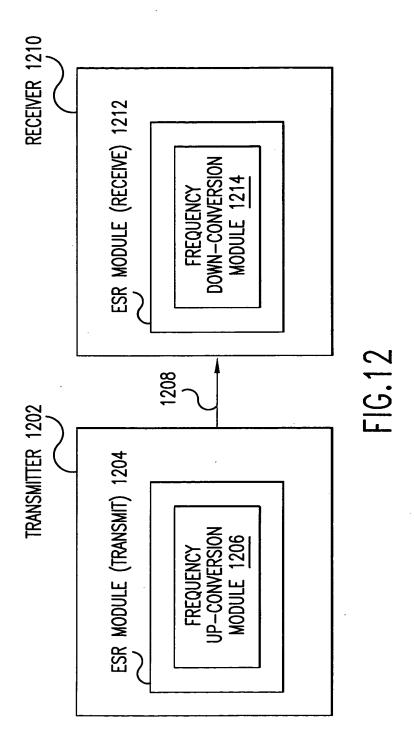
FIG.9

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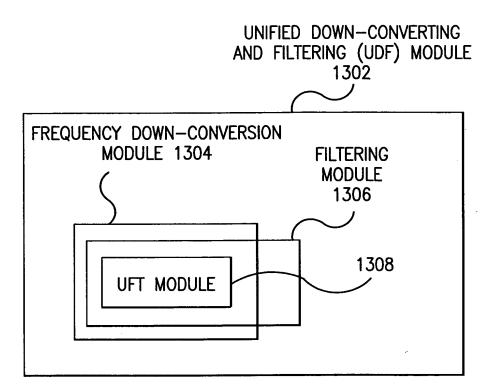


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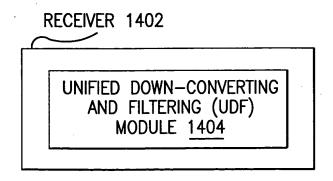


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Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

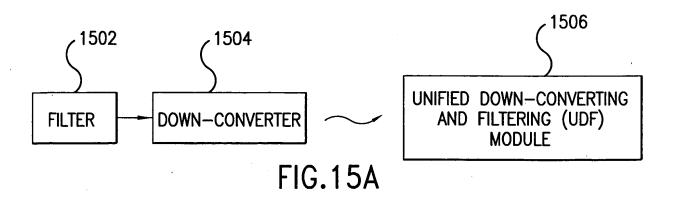


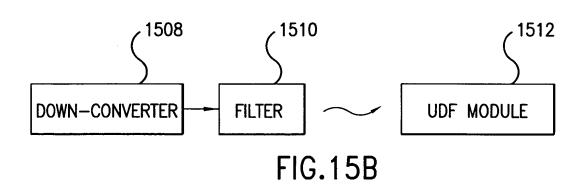
**FIG.13** 

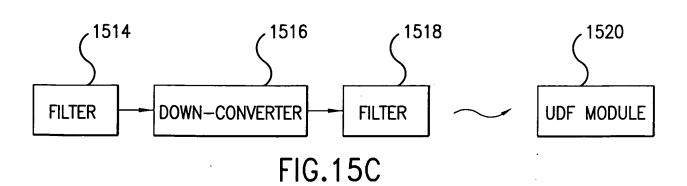


**FIG.14** 

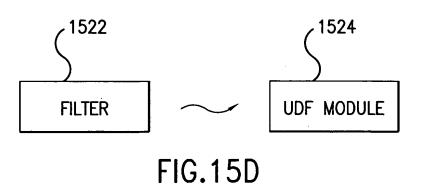
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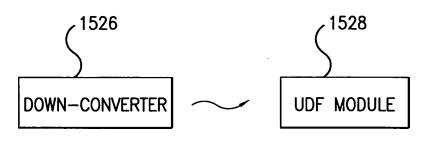


FIG.15E

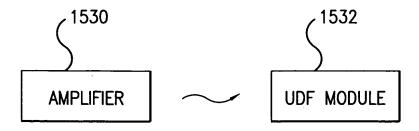


FIG.15F

Replacement Sneet

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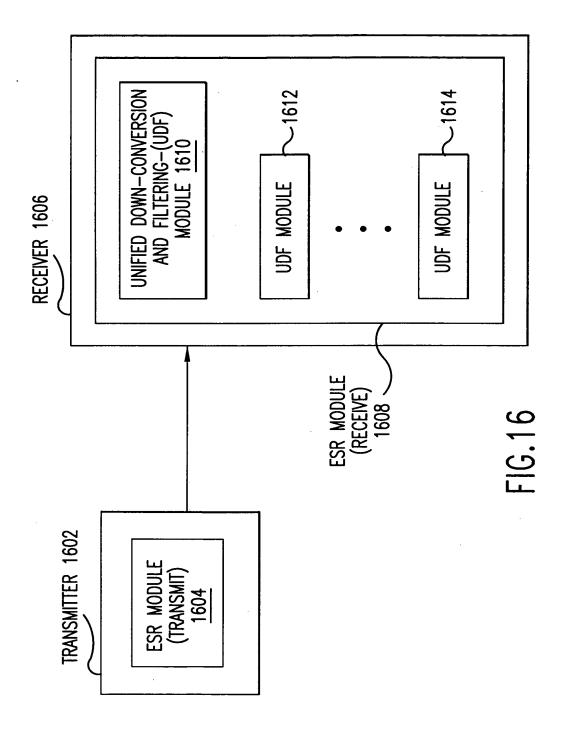
Inventors: Sorrells et al.

Tel. No.: 202-371-2600

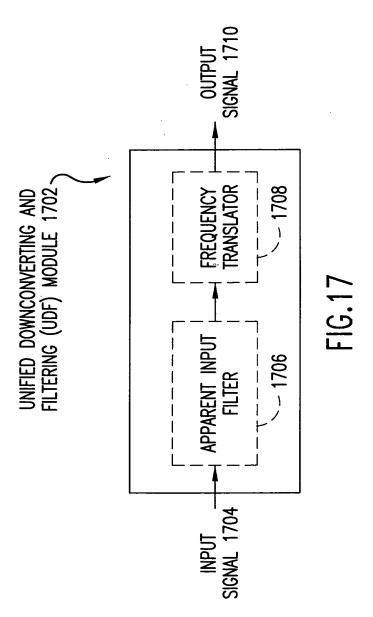
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TIME	1		1		ب		ب		#	
NODE	(RISING OF \$1)	EDGE	(RISING EDGE OF $\phi_2$ )	EDGE	(RISINC OF #1	(RISING EDGE OF \$1)	(RISING EDGE OF \$2)	EDGE	(RISIN OF #1	(RISING EDGE OF 41)
1902	V  t−1	1804	Wt−1		۷۱ŧ	1816	۷۱ <sub>t</sub>	1826	VI <sub>t+1</sub>	1838
1904		-	VI <sub>t-1</sub>	1810	W <sub>t-1</sub>	1818	Мt	1828	۷۱ <sub>t</sub>	1840
1906	V0 <sub>t</sub> -1	1806	V0t-1	1812	700 t	1820	10V	1830	V0 <sub>t+1</sub>	1842
1908	1		V0 <sub>t</sub> -1	1814	V0 <sub>t-1</sub>	1822	70v	1832	V0t	1844
1910	<u> </u>	1807	1		V0 <sub>t-1</sub>	1824	V0 <sub>t-1</sub>	1834	10V	1846
1912			1	1815	l		V0 <sub>t-1</sub>	1836	V0 <sub>t-1</sub>	1848
1918	l						I		VI <sub>t</sub> 1850 0.1 * VO <sub>F</sub>	1850 10-
									0.8 * V	0 <sub>t</sub> -1

Treinor: 1/44-0030003; Offup Unit: 2034

Inventors: Sorrells et al.

Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit UDF MODULE 1922 (BAND PASS) SECOND DELAY ,MODULE 1930 SECOND SCALING MODULE 1934 1910 1910 1990D FIRST SCALING ~ MODULE 1932 990E 1968 1966 1916 1908 FIG. 19 8 1964 1990C <del>|</del> 1992 0<del>|</del> 1992 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 1906 | 190 OUTPUT SAMPLE AND HOLD MODULE 1936 1920 1914 1962 FIRST DELAY MODULE 1928 1918 CONTROL SIGNAL (SAMPLING SIGNAL) 1991 V0 1960 904 1926 958 FREQUENCY TRANSLATOR 1708 NPUT FILTER 1706 AND 1924 954 04 DOWN CONVERT DELAY MODULE ,1902 19 1990A 1950 \_ Տ

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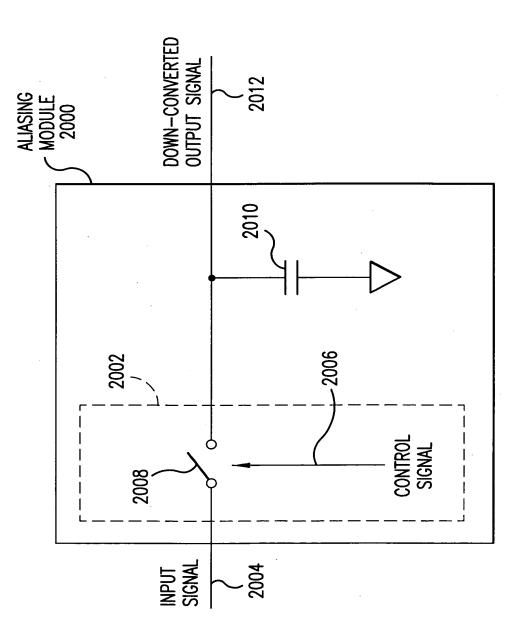
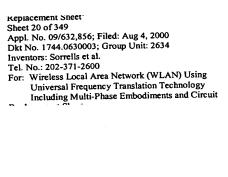


FIG.20A



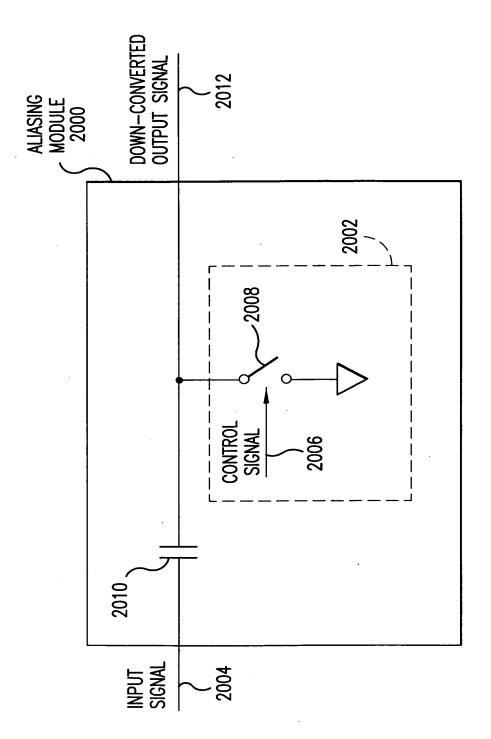


FIG.20A-1

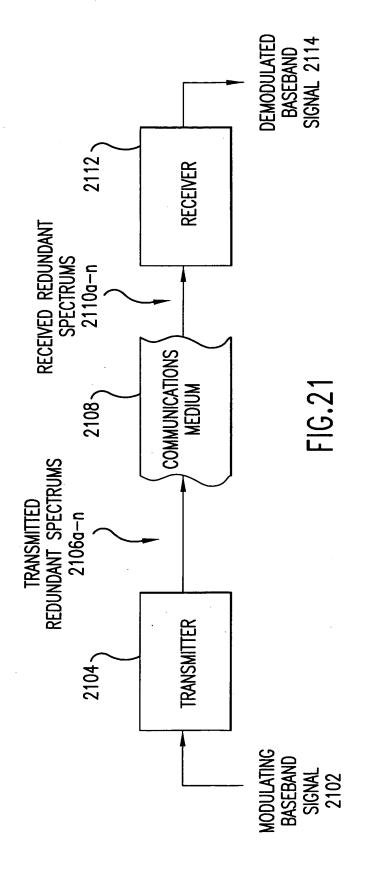
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit 2014 FIG.20B  $t_0$ t 2 t 4 t 3 2016-2022 FIG.20C  $t_0$ 2018-2020. FIG.20D t<sub>0</sub> 2024 2022 FIG.20E 2026 FIG.20F

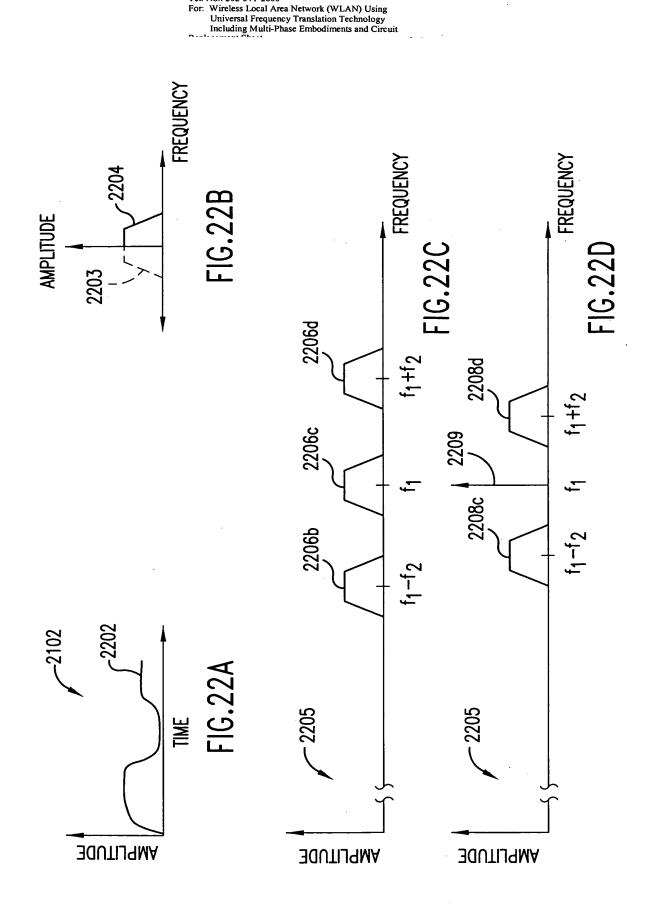
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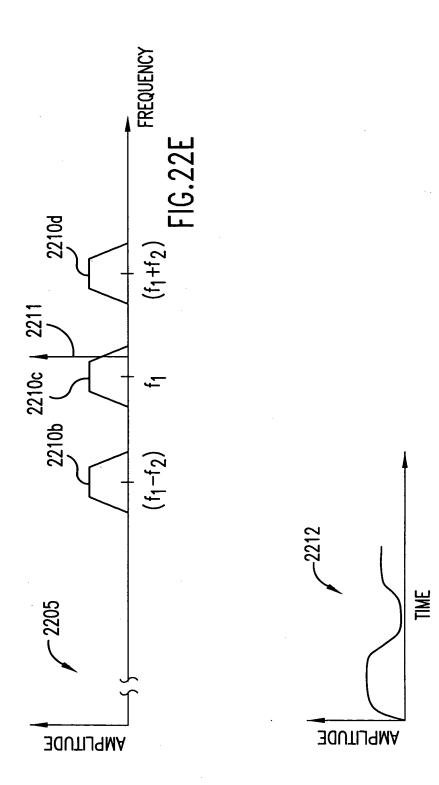
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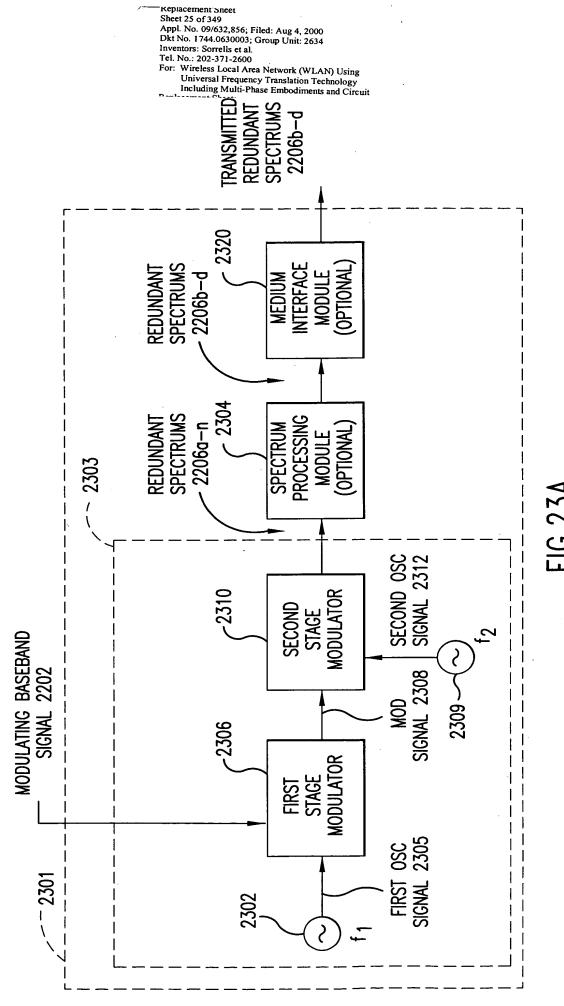
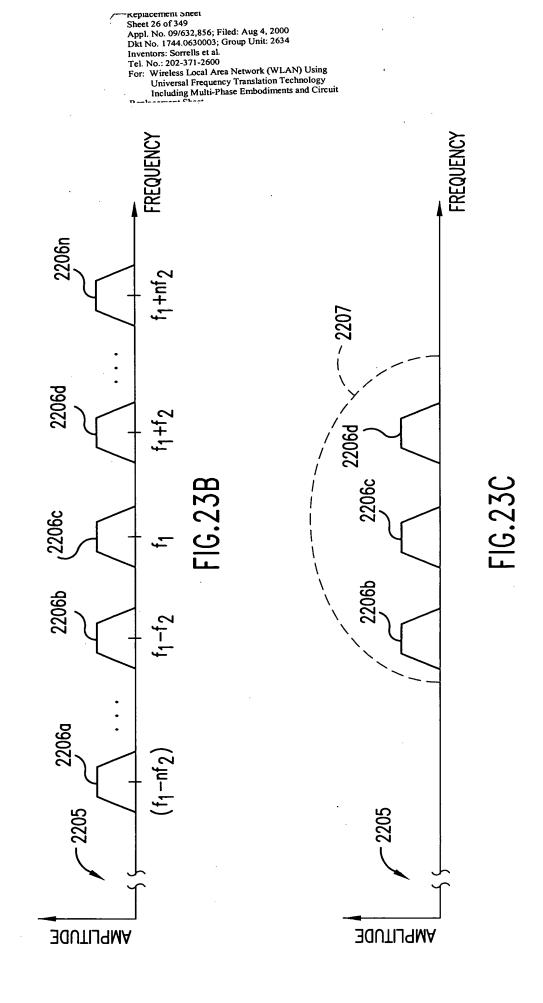
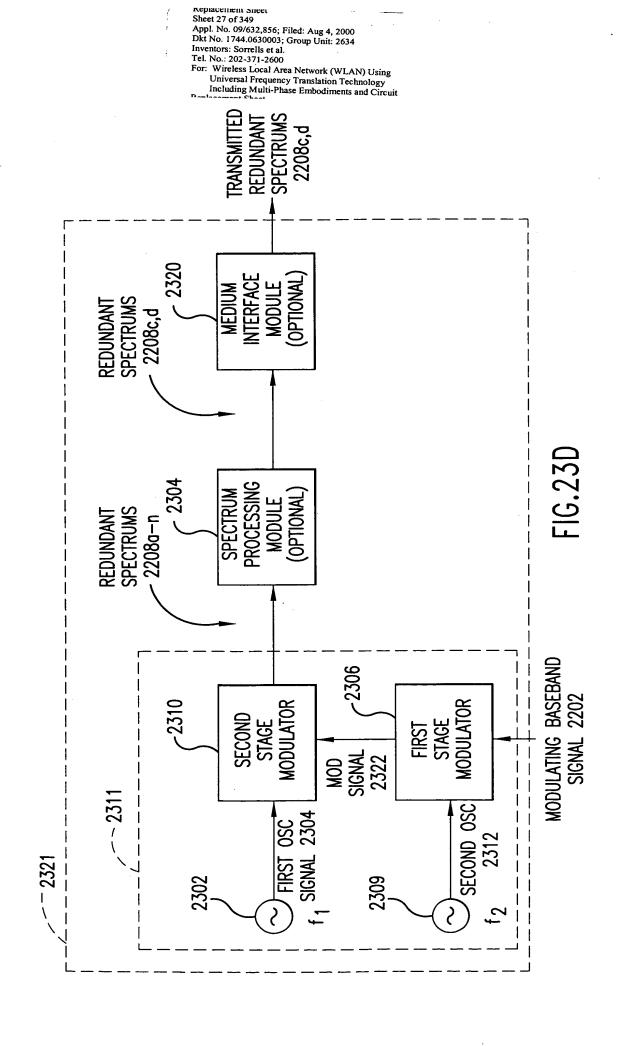
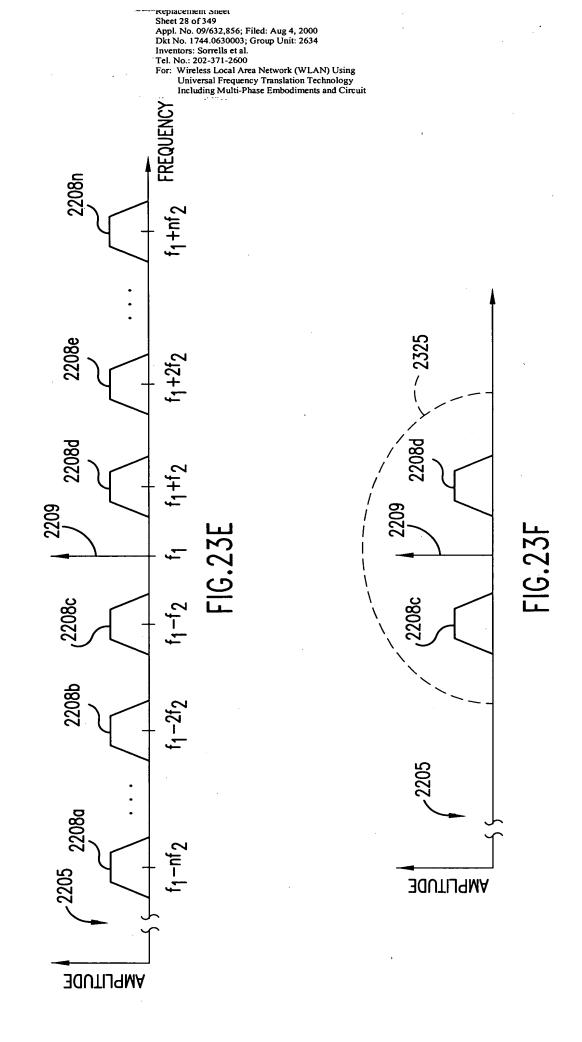


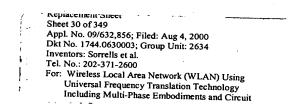
FIG.23A

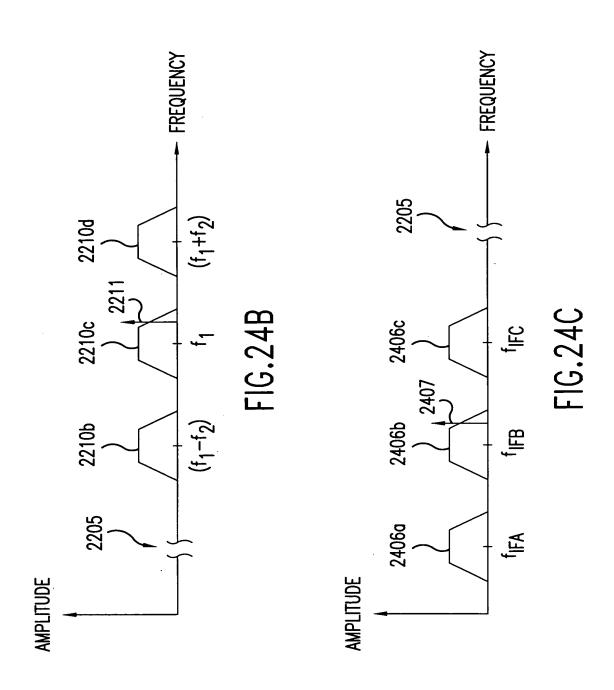




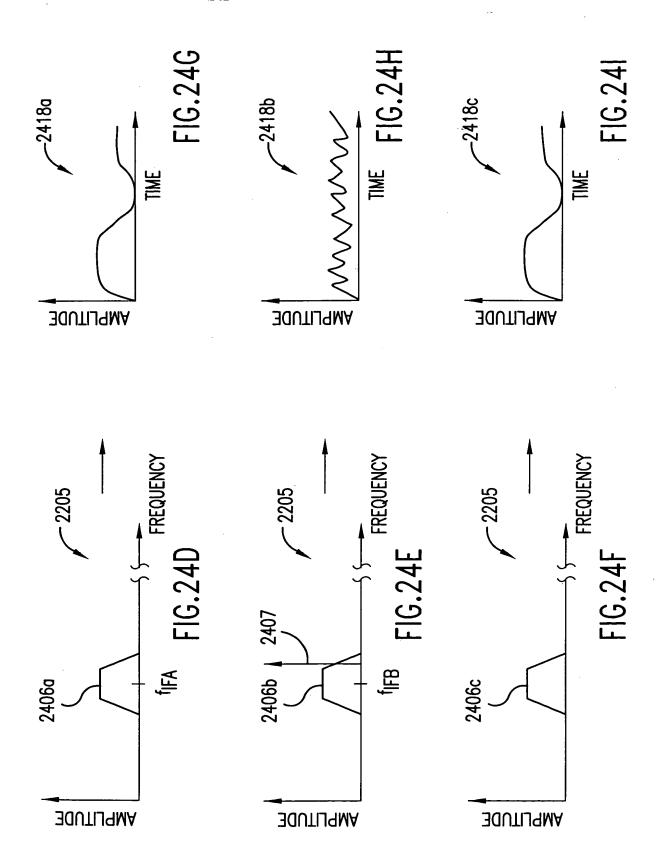


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For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit DEMOD BASEBAND SIGNAL 2212 Arbitration Module 2424 2420c 2422b ' 2422a 2418c 2418b 2418a -2420b -2420a ERROR CHECK ERROR CHECK ERROR CHECK 2418a 2418b 2418c 2414 -2416a 2416b ·2416c DEMOD DEMOD DEMOD DEMOD FIG.24A 2406a 2406b 2406c ·2410a 2410c 里 E REDUNDANT SPECTRUMS 2406a-c 2408 2404 DOWN-CONVERTER RECEIVED
REDUNDANT
SPECTRUMS
2210b-d 2402 (OPTIONAL)
MEDIUM
INTERFACE
MODULE REDUNDANT SPECTRUMS 2210b-d

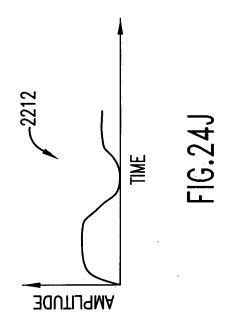




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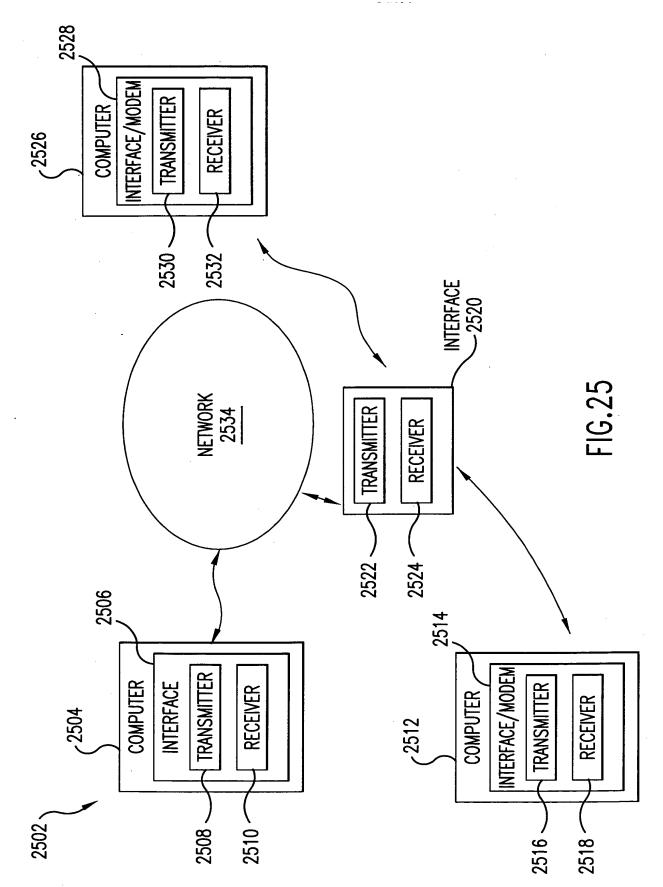


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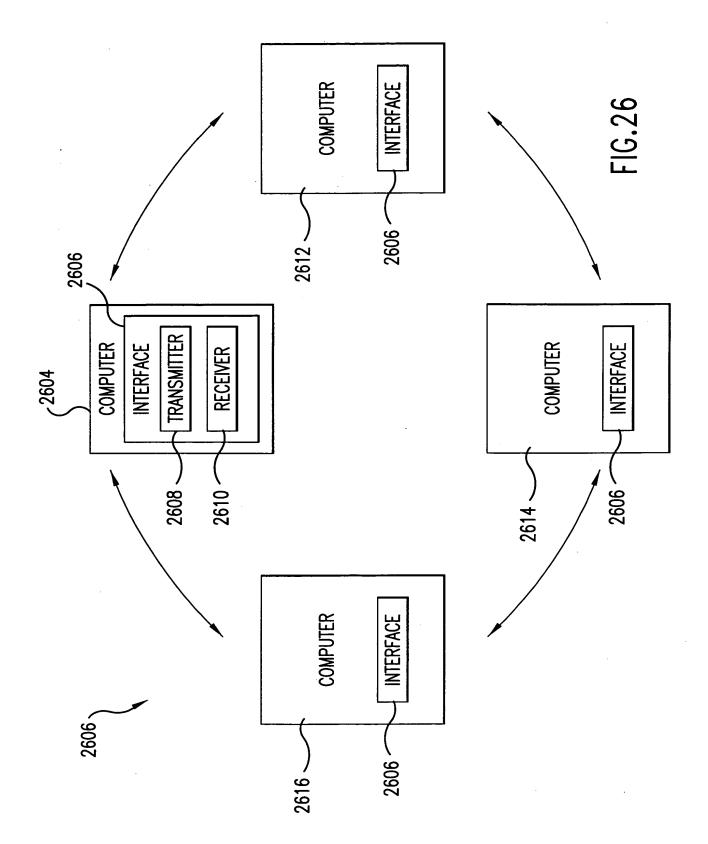


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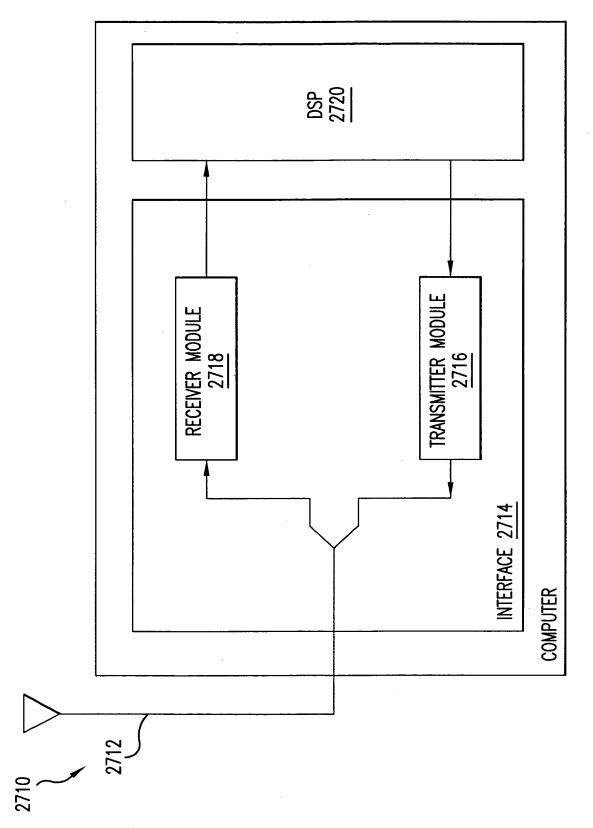
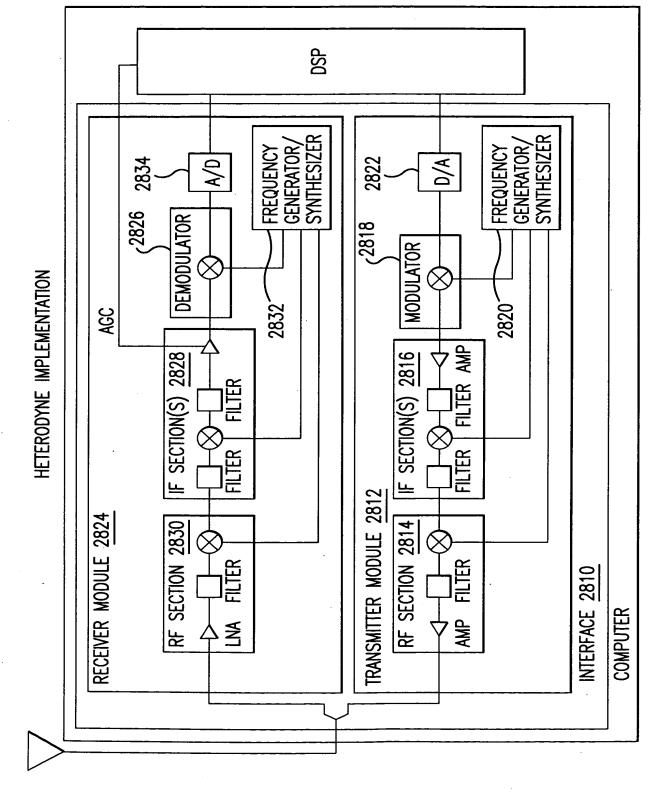


FIG. 27

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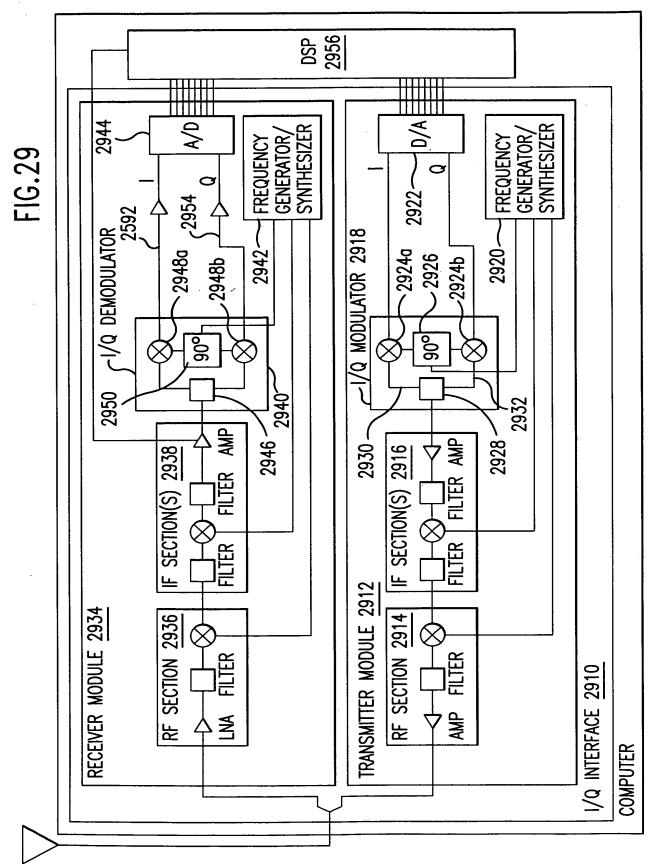
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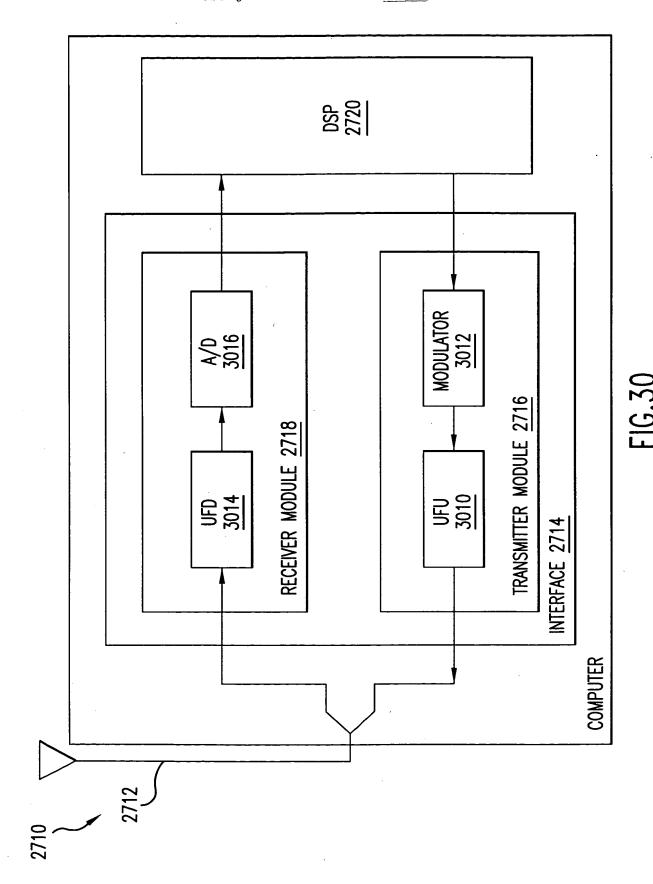
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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

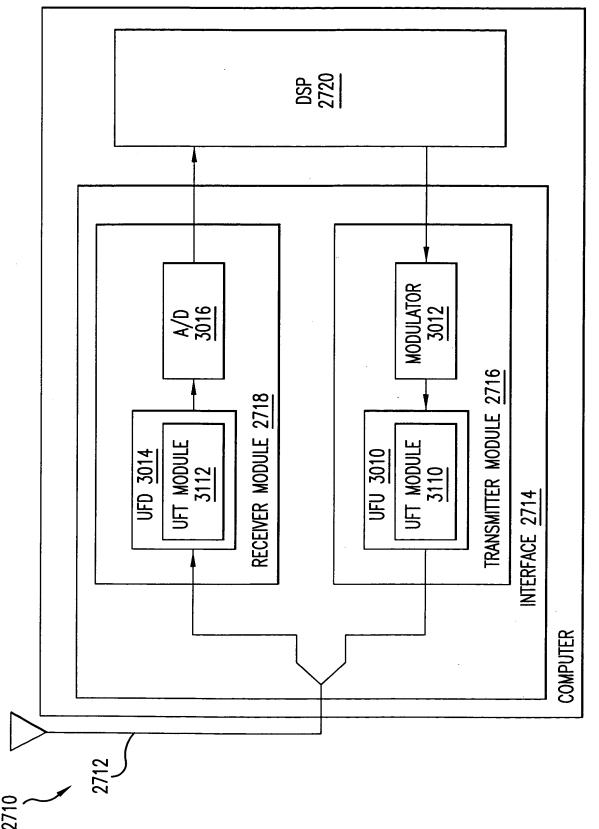
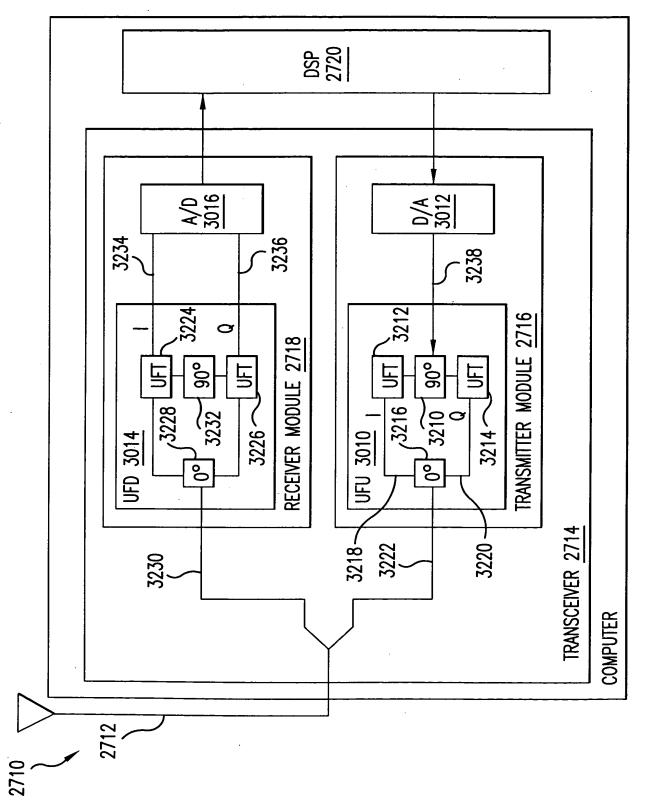


FIG.32



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For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

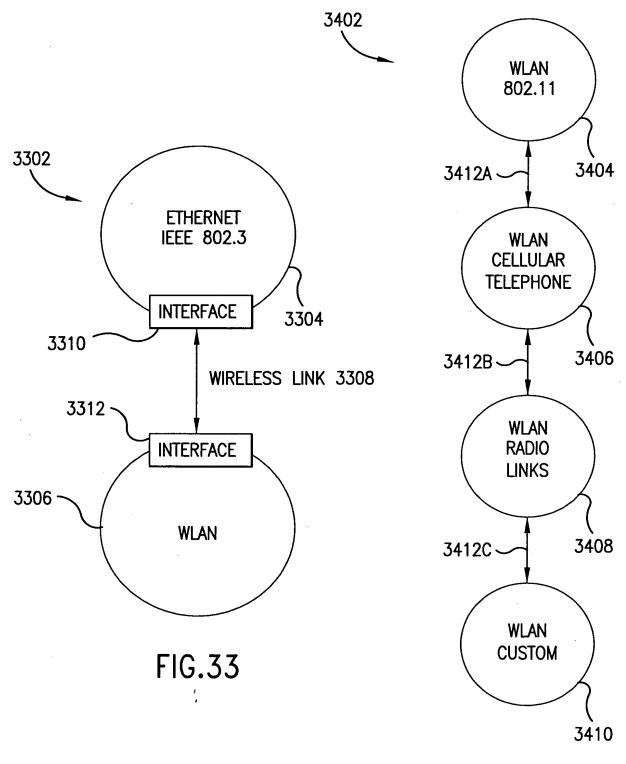
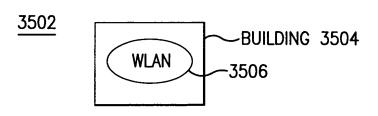


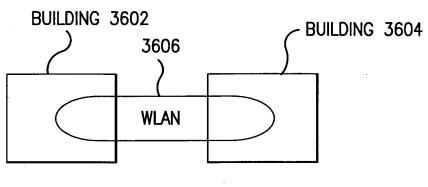
FIG.34

Replacement Sheet Sheet 42 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634

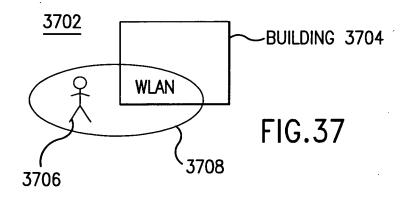
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
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**FIG.35** 



**FIG.36** 





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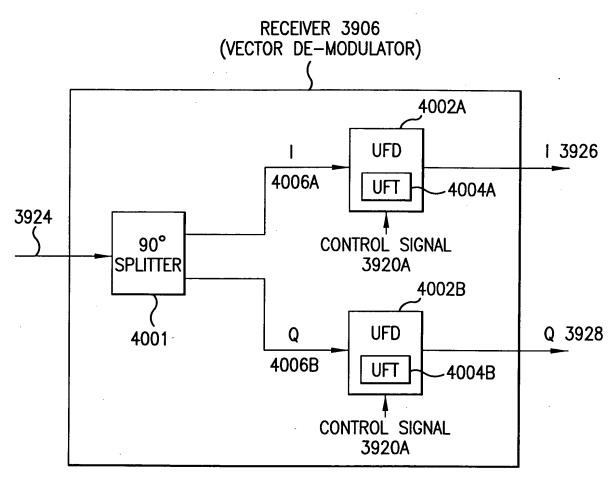
ANTENNA 3903 3922

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Inventors: Sorrells et al.

Tel. No.: 202-371-2600

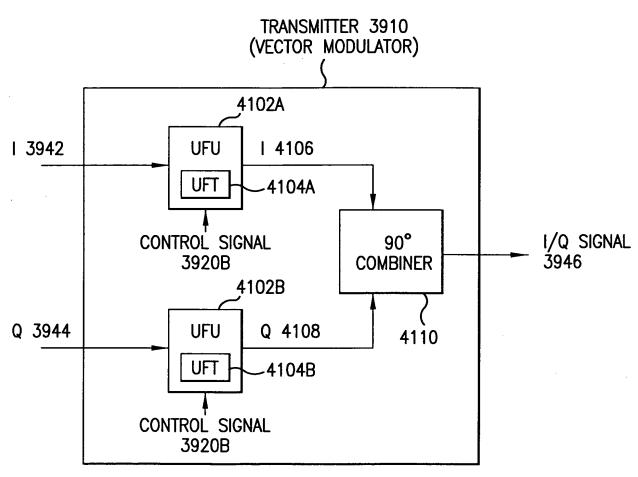
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



**FIG.40** 

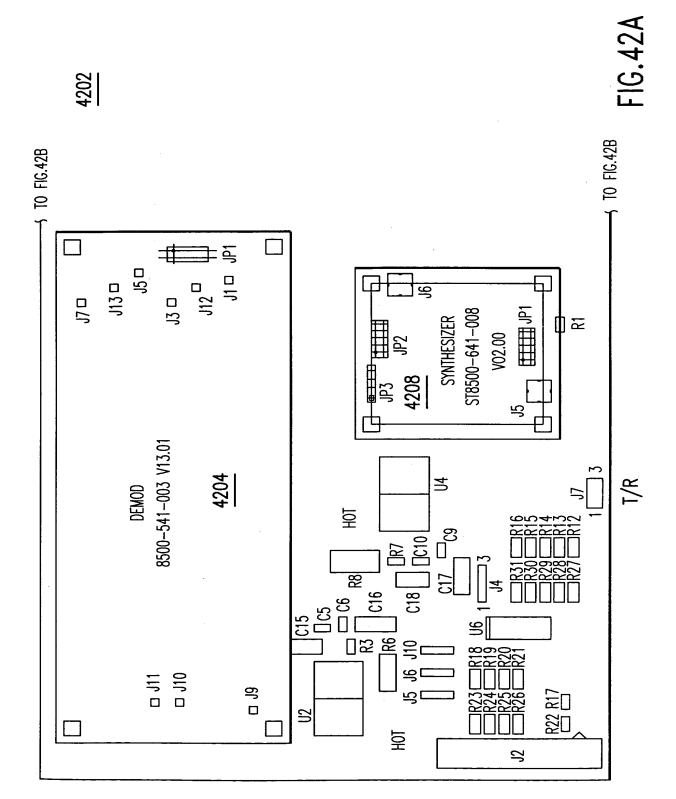
Replacement Sheet Sheet 45 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600

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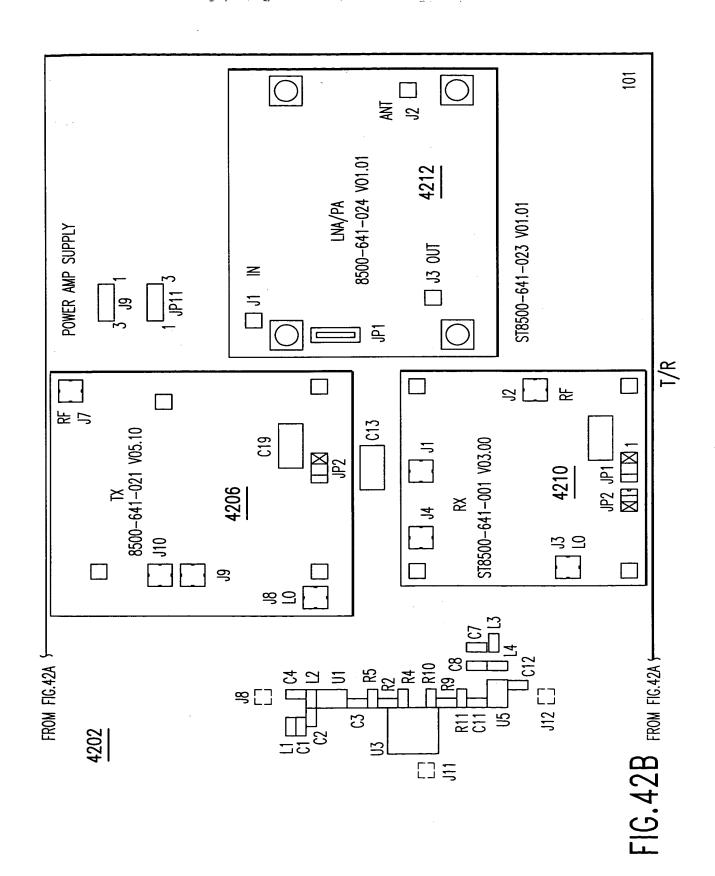
**FIG.41** 

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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
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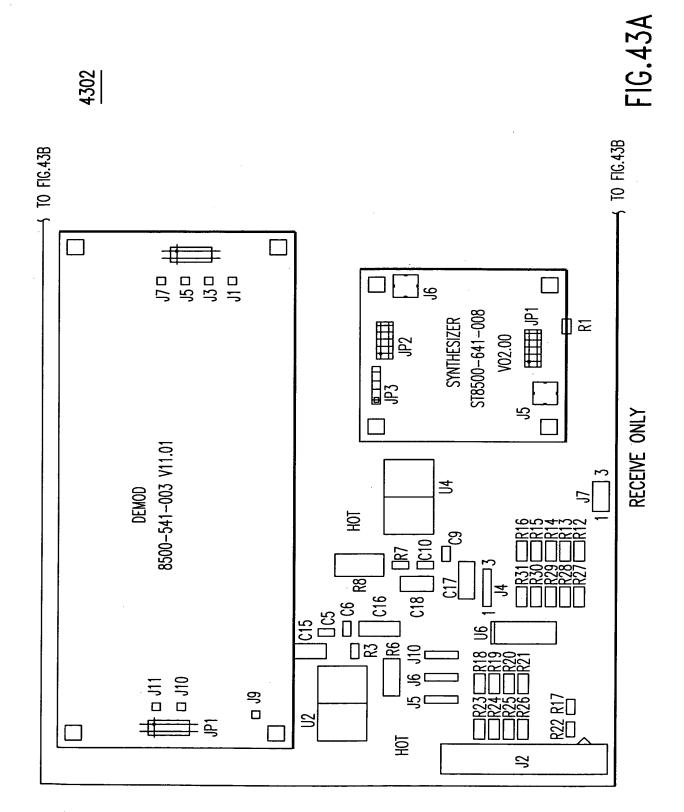


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Inventors: Sorrells et al.

Tel. No.: 202-371-2600

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101 75 LNA/PA 8500-641-014 VO1.01(RX ONLY) 8500-641-024 V01.01 ST8500-641-023 V01.01 POWER AMP SUPPLY 13 OUT Z  $\subseteq$ RECEIVE ONLY 72 爁 C13 ST8500-641-001 V03.00 ≊ FIG.43B FROM FIG.43A F FROM FIG. 43A R2 R2 R4 R9 69 U5  $\mathbb{S}$ 4302 

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit 4402 TO FIG.44B 50 يو[ J13 🗅 170 J3 🗆 SYNTHESIZER ST8500-641-008 լի ≂ **V**02.00 TRANSMIT ONLY  $\overline{5}$ DEMOD 8500-541-003 V13.01 덛 වූ 📙 R7 C10 82 C18 **C16** [] 동 동 등 c ച്ച 110 a 110 ಕ್ರ R22 R17 덛

2

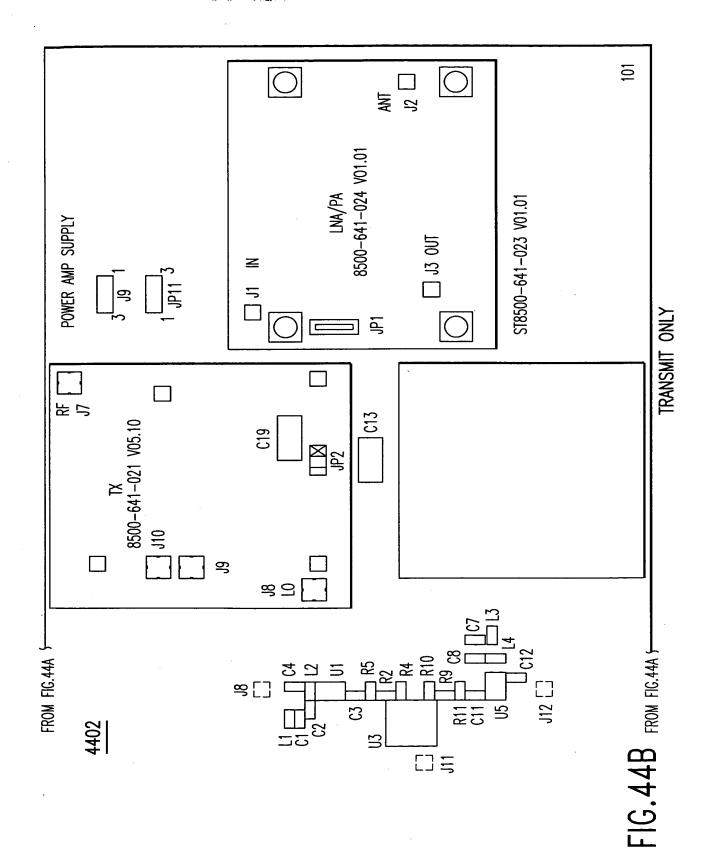
New Sheet Sheet 51 of 349 Sheet 51 of 349

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Inventors: Sorrells et al.

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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit **₽**₽ **₽目**\_\_\_ ₽₽₽₽ **₽** Θ∰<sub>D</sub> 3914 **⊚**■⊳ 7

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Item	Item Quantity Reference	Refe	rence				Part Description	Part Number	Manufacturer
-	-	C123					10uF CAP 6032, TANTALIM 20%	TAJT106K010R	KEMET
2	3	C263,	c263, c273,	C275, C282	C282		4.7uF CAP 6032. TANTALUM.20%	T491A475M006AS	KEMET
2	25	C120, C128,	C125, C136,	C126, C127, C137, C138,	C127, C138,		0.1uF CAP 0603,X7R,10%	GRM39X7R104K050AD	MURATA
	•	C143,	C144,	C145,	C147,				
	-	C148,	C149,	C264,	C272,				
		C2/4,	, 6/7 <sub>2</sub>	, (280)	. (281,				
4	٣	C146,		C276			.01uF CAP 0603,X7R,10%	GRM39X7R103K050AD	MURATA
2	2	C124,	C132,	C133, C271,	C271,		100pF CAP 0603, X7R, 10%	GRM39C0C101K050AD	MURATA
		C278							
9	-	C129					47pF CAP 0603, X7R, 10%	GRM39C0G470J100AD	MURATA
7	2	C270,	C277				27pF CAP 0603, X7R, 10%	GRM39C0G270K050AD	MURATA
∞	-	C130	-				22pF CAP 0603, X7R, 10%	GRM39C0G220K050AD	MURATA
6	<b>-</b>	C131					10pF CAP 0603, X7R, 10%	GMR39C0C100D050AD	MURATA
9		DS1					LED GREEN	597-3311-420	DIALIGHT
=	-	DS2					LED YELLOW	597-3401-420	DIALIGHT
12	<b>—</b>	DS3					LED RED	597-3111-420	DIALIGHT
13	9	JP12, JP17	JP13,	JP14,	4, JP15, JP16,	16,	CONNECTOR HEADER 2PIN	2MS-19-33-01	SPECIALITY ELECTRONICS
14	<del></del>	JP11					CONNECTOR HEADER 4PIN	100/VH/TM1SQ/W.100/4	BLKCON

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HUBER/SHUNER	SAMTEC SAMTEC	ITT CANON	MURATA			PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	ERJ KOA	PANASONIC	PANASONIC		SAMSUNG	MIISUBUSHI AMD	CIAD
82MMCX-50-0-1	TMS-110-01-G-S EHT-1-10-01-S-D	DICMJ-68S-SPC-M08	BLM11A121S			ERJ-36SYJ394V	ERJ-36SYJ104V	ERJ-36SYJ153V	ERJ-36SYJ912V	ERJ-3GSYJ822V	ERJ-3GSYJ392V	ERJ-36SYJ751V	ERJ-36SYJ561V	ERJ-36SYJ331V	ERJ-36SYJ500V	ERJ-36SYJ100V	RM732Z1J000ZT	36SYJ000V	~		KM62256DLTG-5L	MSMSZS6CVP-SSLL AM79C930	
CONNECTOR 82MMCX	CONNECTOR HEADER 10 CONNECTOR WITH EJECTOR	CONNECTOR 34X2PCMCIA	FERRITE BEAD		10M, RESISTOR,0603,5%	390K, RESISTOR, 0603, 5%	100K, RESISTOR, 0603, 5%	15K, RESISTOR, 0603,5%	9.1K, RESISTOR, 0603,5%	8.2K, RESISTOR, 0603,5%	3.9K, RESISTOR, 0603,5%	750, RESISTOR, 0630,5%	560, RESISTOR, 0603,5%	330, RESISTOR, 0603,5%	50, RESISTOR, 0603,5%	10, RESISTOR, 0603,5%	0, RESISTOR, 0603,5%		TBD, RESISTOR, 0603,5%		SRAM	MAC	
116, 120, 121, 122, 123, 124, 125	J18 J19	P1	L59, L60, L61, L63, L64, L65,		R112	R114	R105	R106, R107,R108, R111		R115	R113	R101	R110	R99, R100	R119	R128, R129	R102, R103, R104, R109,	R117, R118, R120, R127,	R121, R122, R123, R124,	R125, R126	U10		210
7		<u>.</u>	7		<del></del>	-	_	4	-		-	-	-	7	-	2	∞		9		<b>-</b>	-	-
15	16	18	19	20	21	22	23	24	22	56	23	28	53	30	31	32	33		34		35	36	3

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BASEBAND PROCESSOR	HFA3842A1	HARRIS
FLASH RAM	AM29F010-55EC	AMD
32 KHz CRYSTAL	CX-6V-SM2-32.768KHz(	C/1 STATEK
BUS BUFFER	DS3862	NATIONAL
REGULATOR 3.5 V	TK11235BMC	T0K0
22MHz OSCILLATOR	FOX F3346-22MHz	FOX
2 VOLT REFERENCE	TK11220BMC T0K0	TOKO
40MHz OSCILLATOR	CX0-M-10N-40MH <sub>2</sub> A/1	STATEK

U13 U14 U15 U48 U49 U50

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FIG.47B	FIG.47D
FIG.47A	FIG.47C

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Including Multi-Phase Embodiments and Circuit **U43** BLM11A1213 R30 221 ALLOW\_CONNECT=TRUE +5V\_RX +3.3V\_RX1 R164 2 TB0 R165 1B0 33.2K TO FIG.47C |\_TX\_0UT J12 82MMCX I\_RX\_IN J3 82MMCX SZMMCX 3912 FIG.47A <u>P</u> TX/RX8 +5V RX

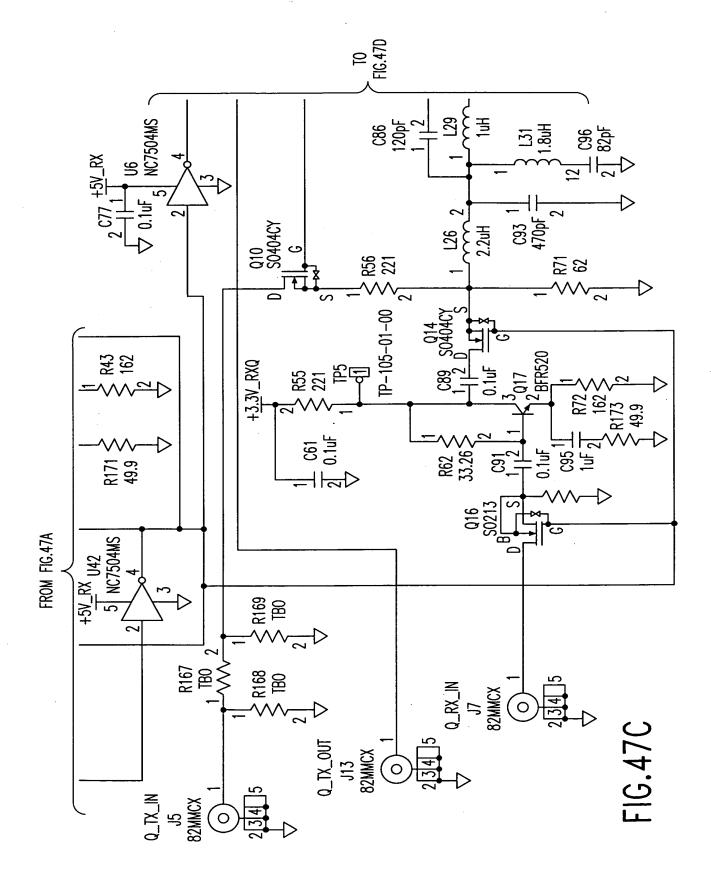
New Sheet Sheet 57 of 349

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit 鋻 R37 49.9 £ ₹ FIG.47B R25 402 R36 200 R24 475 R35 68.1 +3.3V\_RXI 33 33 33 33 X R32 ✓ 200 88 8 8 BFM505 C72 DNP R28 402 R47 402 **BFM505** , 04B R46 68.1 2 R27
475 +3.3V\_RXI +3.3V\_RXQ +3.3V\_RX SS 9 R26 33K 33 33 34 35 35 689 03 S0213 B R44 49.9 120pF FROM FIG.47A

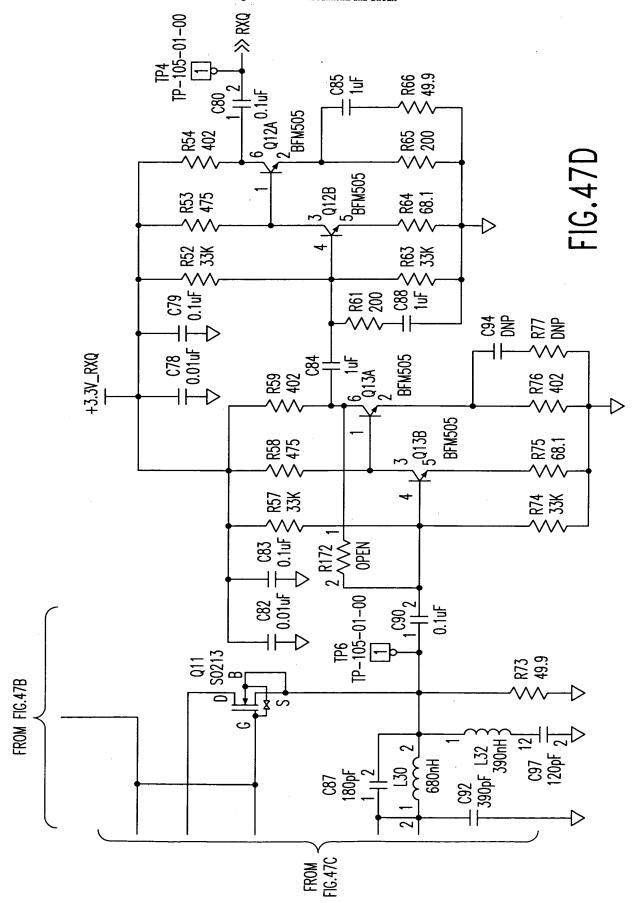
New Sheet

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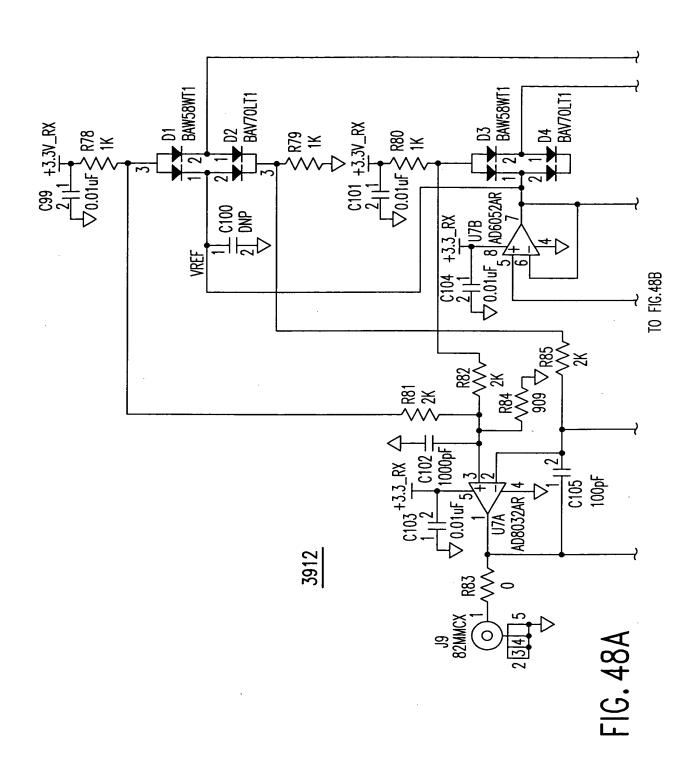
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Inventors: Sorrells et al. Tel. No.: 202-371-2600

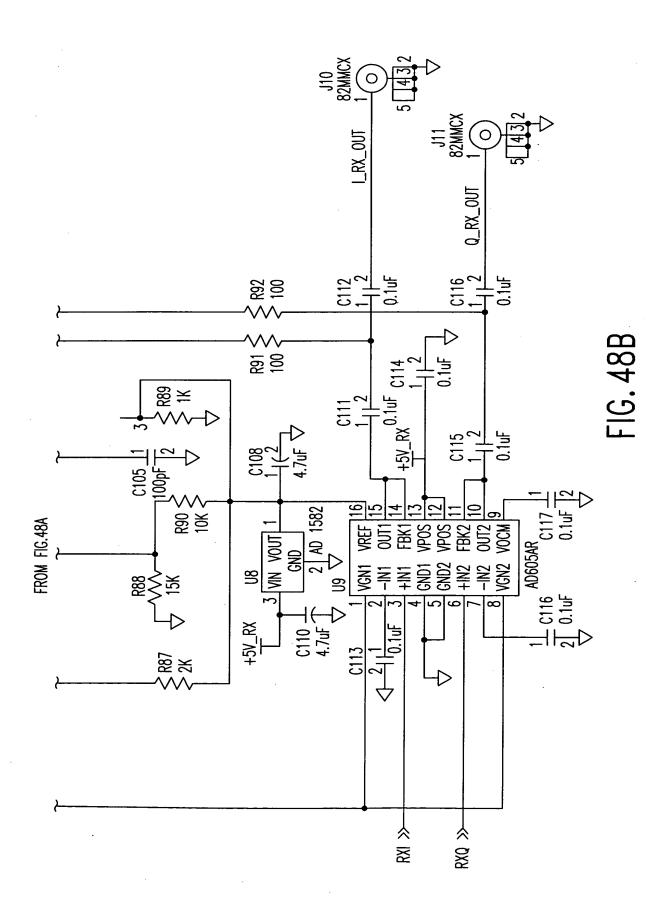
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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																											L	<b>-</b>
MANUFACTURER	KEMET	MURATA					KEMET	MURATA		MURATA		MURATA	MURATA	MURATA	MURATA	MURATA	MURATA	MURATA	MURATA	MOTOROLA	MOTOROLA	SAMTEC	SUHNER		MURATA	MURATA	MURATA	MURATA
PART NUMBER	T491A475K006AS	GRM39Y5V104Z016			And Andrews of the Principles		T491A475K006AS	GRM39X7R103K050		GRM40Y5V105Z016	-	GRM39C0G121J050	GRM39C0C181J050	GRM39C0G391J050	GRM39C0G471J050	GRM40Y5V105Z016	GRM39C0G820J050	DNP	GRM39C0C102K050	BAW56WT1	BAV70LT1	FTSH-107-02-L-D	82MMCX-50-0-1		BLM11A121S	LQC21N2R2K10	LQC21N1ROK10	LQC21NR68K10
PART	4.7uF	0.1uF					dNO	0.01uF		1uF		120pF	180pF	390pF	470pF	dNo	82pF	dNO	1000pF	BAW56WT1	BAV70LT1	HEADER 7X2	82MMCX		BLM11A121S	2.2uH	1년	Hu089
QUANT.   REFERENCE	C3,C52,C108,C110	C51, C54, C57, C58, C60, C61,	C67, C68, C69, C77, C79, C80,	C81, C83, C89, C90, C91, C111,	C112, C113, C114, C115, C116,	C117,C118,C119	C55	C56, C59, C78, C82, C99, C101,	C103,C104	C62, C63, C66, C73, C84, C85,	C88, C95	C64, C75, C86, C97	C65, C87	C70,C92	C71,C93	C72,C94	C74, C96	C100, C106	C105, C102	03,01	04,02	JP1	11, 13, 15, 17, 19, 110, 111,	112, 113	L1	L23,L28		L30,L25
QUANT.	4	26					-	8		8				2				2	2	2	2	1	6		1	2	2	2
ITEM	1	2					3	4		2	-	9	7	8	6	10	11	12	13	14	15	16	17		18	19	20	21

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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

																		( )			•								
MURATA	MURATA	CALOGIC	PHILIPS	CALOGIC	PHILIPS	PANASONIC	PANASONIC		PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC		PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC		0110011110
LQC21N1R8K10	LQG21NR39K10	SD404CY	BFM505	S0213	BFR520	ERJ3GSY0R00	ERJ36SYJ333		ERJ3EKF4750	ERJ3EKF4020	ERJ3EKF2210	ERJ3GSYJ201	ERJ3GSYJ333	ERJ3EKF68R1	ERJ3EKF2000	ERJ3EKF49R9		ERJ3EKF1001	ERJEGSY J620	ERJ3EKF1620	ERJ36SYJ330	ERJ3EKF2001	ERJ3EKF9090	ERJ3EJF1502	ERJ3EKF1002	ERJ3EKF1000			
1.8uH	390nH	SD404CY	BFM505	SD213	BFR520	0	33K	-	475	402	221	200	33.2K	68.1	200	49.9		1K	62	162	dNO	2K	606	15K	10K	100	TB0		
L26,L31	L32, L27	01,05,010,014	02,04,012,013	03,07,011,016	017,08	R19, R20, R21, R83	R23, R26, R34, R45, R52, R57,	R63, R74	R24, R27, R53, R58	R25, R28, R47, R54, R59, R76	R29, R30, R55, R56	R32,R61	R33, R62	R35,R46,R64,R75	R36, R65	R37, R44, R66, R73, R171,	R173	R40, R68, R78, R79, R80, R89	R42, R71	R43,R72	R77,R48	R81, R82, R85, R87	R84	R88	R90	R91, R92	R164, R165, R166, R167, R168,	R169	
2	2	4	4	4	2	4	∞		4	9	4	2	2	4	2	9		9	2	2	2	4	-	-	-	2	9		
22	23	24	25	26	27	28	23		30	31	32	33	34	35	36	37		38	39	40	41	42	43	44	45	46	47		

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46	9	TP1, TP2, TP3, TP4, TP5, TP6	TP-105-01-00		·
20	2	U42,U6	NC7S04M5	NC7S04M5	NATIONAL SEMICONDUCTOR
51	1		AD8052AR	AD8052AR	ANALOG DEVICES
52	1	8N	AD1582	AD1582	ANALOG DEVICES
53	1	60	AD605AR	AD605AR	ANALOG DEVICES
54	1	U43	TK11235AMTL	TK11235BM	T0K0
55	-		BOARD	8500.541.003.V13.01	

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FIG.50B	FIG.50D
FIG.50A	FIG.50C

New Sheet Sheet 67 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit Y 70 FIG.50B 2 L1 1 BLM11A1213 **U43** R30 221 ALLOW\_CONNECT=TRUE 2 C51 1 0.1uF R42 62 +5V\_RX R166 TB0 R29 221 1P2 1P-10 +3.3V\_RXI \$ \$ \$ 8 \$ \$ \$ 8 C61 2 0.1uF R165 TB0 33.2K TO FIG.50C J3 82MMCX 0 XI ≊ ≊ 3912 HEADER 7X2 4208042 **FIG.50A** 맆 TX/RX8 <u>~</u> +5V

Inventors: Sorrells et al. For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit TP1 TP-105-01-00 ፟ FIG.50B R25 402 R36 R24 475 R35 68.1 +3.3V\_RX1 7 TuF R32 **33 BFM505** C72 1uF R28 402 <sub>5</sub> Q4B R46 68.1 C55 4.7uF 726 334 336 R170 +3.3V\_RXI +3.3V\_RXQ . . . . . 03 S0213 B R44 49.9 TO FIG.50D ပ် 125 680nH FROM FIG.50A

New Sheet Sheet 68 of 349

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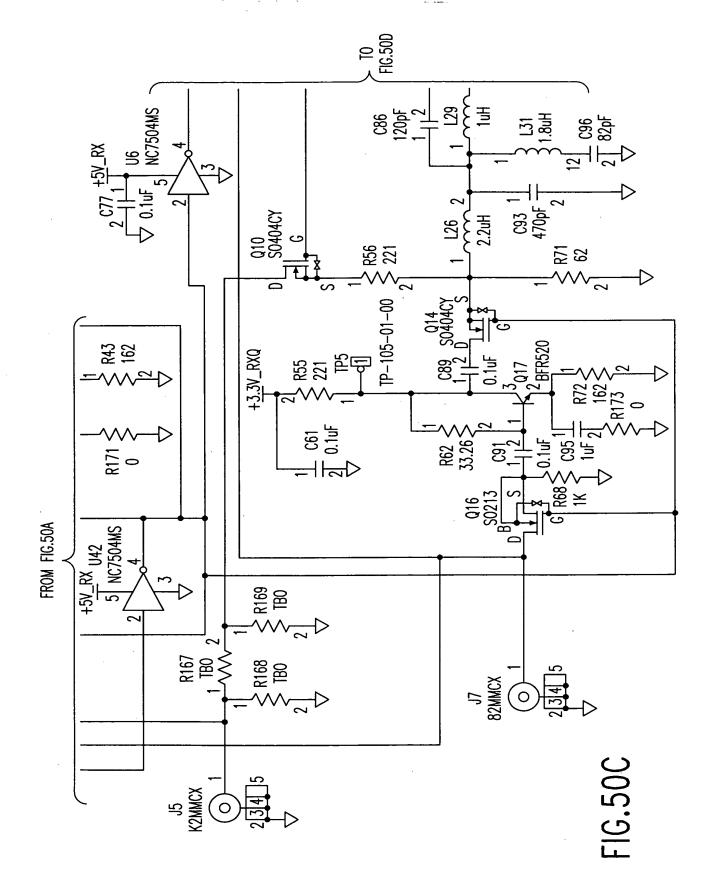
Appl. No. 09/632,856; Filed: Aug 4, 2000

Dkt No. 1744.0630003; Group Unit: 2634

Inventors: Sorrells et al.

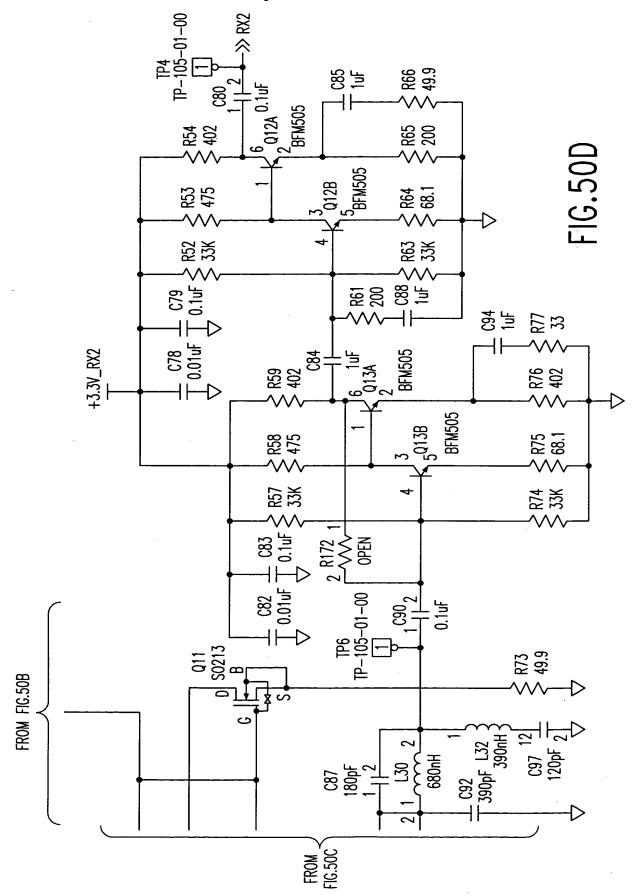
Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

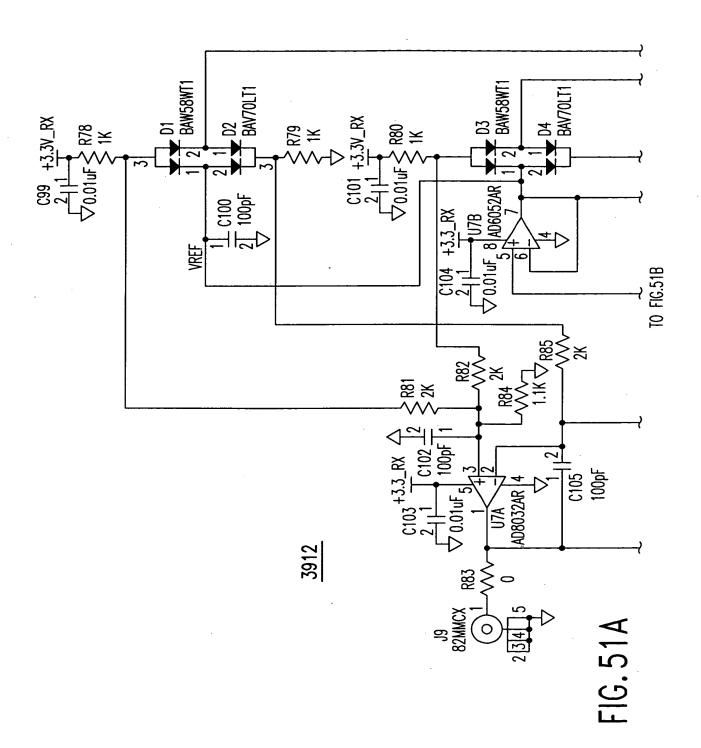


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For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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Inventors: Sorrells et al.
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Dkt No. 1744.0630003; Group Unit: 2634
/Inventors: Sorrells et al.
Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit HEADER 7X2 ₹ ሯ O ≊ RSSI 198 198 198 FIG. 51B +5V\_RX AD 1582 85 5 5 7 VOUT 8 \$ +5V\_RX C113 **7887** 8X0 ≫ 经

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Dkt No. 1744.0630003; Group Unit: 2634
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Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

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MANUFACTURER	KEMET	MURATA					MURATA		MURATA		MURATA	MURATA	MURATA	MURATA	MURATA	MURATA			MOTOROLA	MOTOROLA		JOHNSON	SUHNER	MURATA	MURATA	MURATA	MURATA	MURATA
PART NUMBER	T491A475K006AS	GRM39Y5V104Z016					GRM39X7R103K050		GRM40Y5V105Z016		GRM39C0G121J050	GRM39C0C181J050	GRM39C0G391J050	GRM39C0G471J050	GRM39C0C820J050	GRM39C0C101K050			BAW56WT1	BAV70LT1		142-0701-231	82MMCX-50-0-1	BLM11A121S	LQG21N2R2K10	LQG21N1R0K10	LQC21NR68K10	LQC21N1R8K10
PART	4.7uF	0.1uF					0.01uF		1uf		120pF	180pF	390pF	470pF	82pF	100pF	1 uF	4.7uF	BAW56WT1	BAV70LT1	HEADER 7X2	82MMCX	82MMCX	BLM11A121S	2.2uH	1 <sub>U</sub> H	680nH	1.8uH
REFERENCE	C3,C52,C55	C51, C54, C57, C58, C60, C61,	C67, C68, C69, C77, C79, C80,	C81, C83, C89, C90, C91, C111,	C112,C113,C114,C115,C116,	C117,C118,C119	C56, C59, C78, C82, C99, C101,	C103,C104	C62, C63, C66, C72, C73, C84,	C85, C88, C94, C95	ျပ	C87, C65	C70,C92	C71,C93	C96,C74	C100,C102,C105,C106,C107	C108	C110	03,01	04,02	JP2, JP1	11, 13, 15, 17, 110, 111	J9	17	128,123	L24,L29	L30,L25	126,131
ΔI	2	26					8		10		4	7	7	2	2	5	-	1	7	7	7	9	-	1	2	7	7	2
ITEM	-	2					3		4		5	9	7	8	6	10	11	15	13	11	15	91	11	18	19	70	21	22

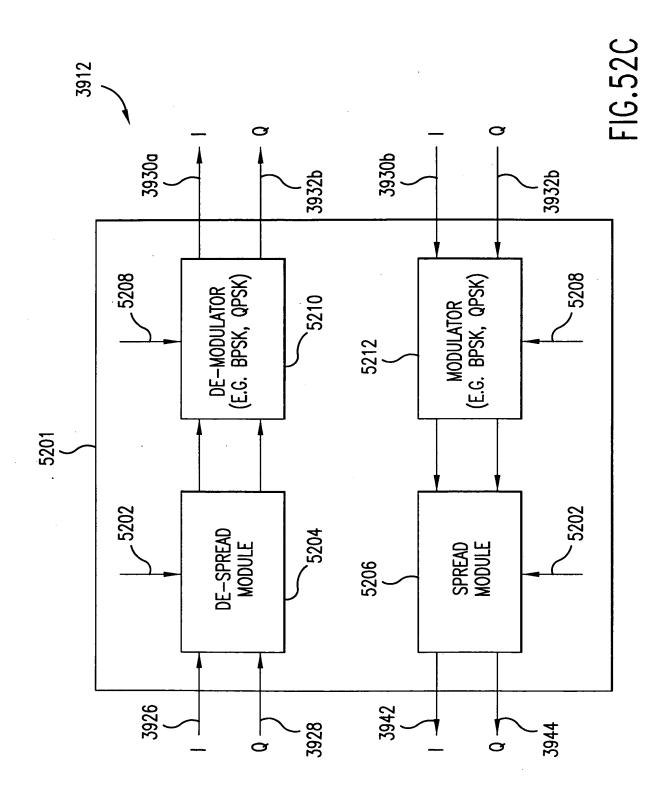
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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

																									ū	_			
MURATA	CALOGIC	PHILIPS	CALOGIC	PHILIPS		PANASONIC		PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC			
LQC21NR39K10	SD404CY	BFM505	SD213	BFR505		ERJ36SY333		ERJ3EKF4750	ERJ3EKF 4020	ERF3EKF2210	ERJ3GSYJ201	ERJ3GSYJ333	ERJ3EKF68R1	ERJ3EKF2000	ERJ3EKF 49R9	ERJ3EKF1001	ERJ3GSYJ620	ERJ3EKF6810	ERJ3EKF1001	ERJ3GSYJ330	ERJ3EKF2001	ERJGSY0R00	ERJ3EKF2001	ERJ3EKF1502	ERJ3EKF1002	ERJ3EKF1000			
390nH	SD404CY	BFM505	SD213	BFR520	0	33K		475	402	221	200	33.2K	68.1	200	49.9	1K	62	162	49.9	33	2K	0	1.1K	15K	10K	100	180		0PEN
L27,L32	91,05,010,014	02,04,012,013	03,07,011,016	017,08	R19, R20, R21, R171, R173	R23, R26, R34, R45, R52, R57,	R63, R74	R24, R27, R53, R58	R25, R28, R47, R54, R59, R76	٦,	R32, R61	R33,R62	R35,R46,R64,R75	R36, R65	R66, R37	R40, R68, R78, R79, R80, R89	R42, R71	R43,R72	R44,R73	R77,R48	R81, R82, R85, R87	R83	R84	R88	R90	R91, R92	R164, R165, R166, R167, R168,	R169	R170,R172
2	4	4	4		5	8		4	9	4	2	2	4	2	2	9	2	2	2	2	4	-	-	-	-	2	9		2
23	24	22	56	27	28	53	,	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49		22

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Dkt No. 1744.0630003; Group Unit: 2634
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

	TP1, TP2, TP3, TP4, TP5, TP6	TP-105-01-00		
<b>U42</b>	90,	NC7S04M5		NATIONAL SEMICONDUCTOR
11		AD8032AR	AD8032AR	ANALOG DEVICES
88		AD1582	AD1582	ANALOG DEVICES
ജ		AD605AR	AD605AR	ANALOG DEVICES
U4	3	TK11235AMTL	TK11235AMTL	TOKO

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Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit FIG.53C FIG.53B FIG.53A MOUNT C5 BOTTOM SIDE AT VIA CONNECTING D2 PIN 0.1uF RECEIVER 3906 0.1uF 3 . R5 33.2K S ∞ √ U3B \ AD8032AR **♦ 0.1**⊌F ₹ 1 69190-403 3926

Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit -16.53B MOUNT C15 BOTTOM SIDE AT VIA CONNECTING D2D PIN R17 DNP R12 221 R13 33.2K 0 DEG DEG ട 1X603 **N**2  $\frac{8}{2}$  $\mathbf{z}$ +2∕ 22 14.72 22pF 0.1<sub>u</sub>F 82MMCX-50-0-1 RF 3924

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For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

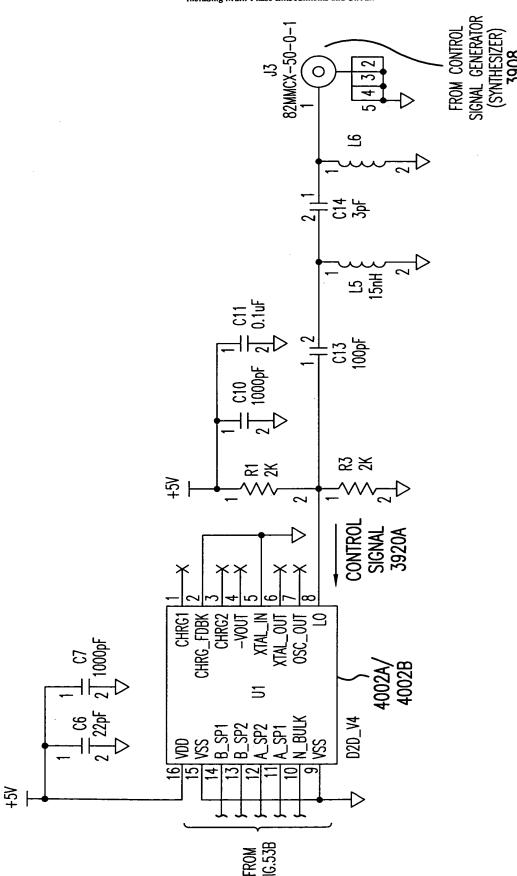


FIG.53C

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

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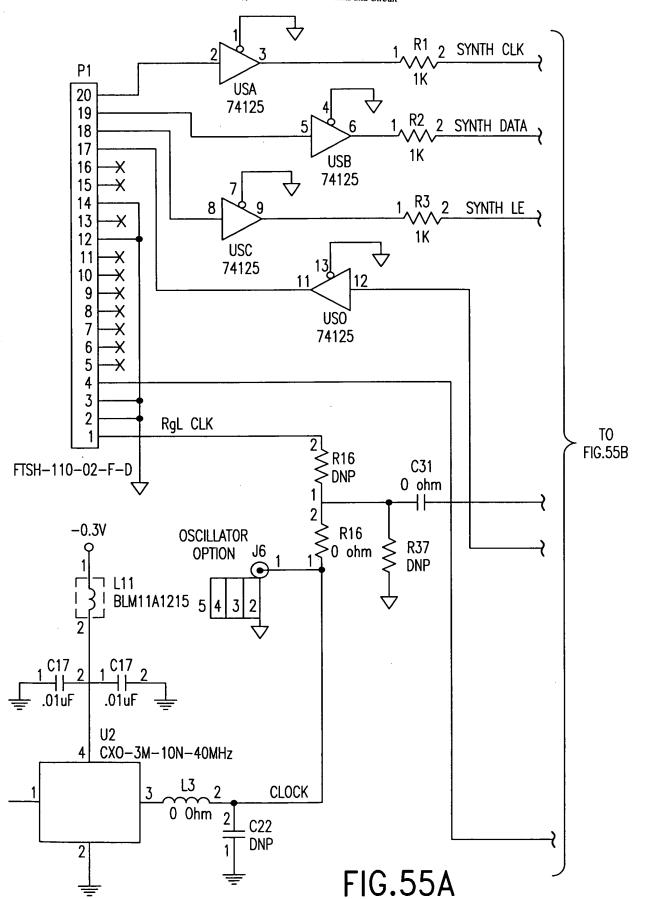
																													<b>_</b>
MANUFACTURER		MURATA		MURATA	MURATA	MURATA	MURATA	MURATA	MURATA	MURATA	BERG	BERG	SUHNER	10K0	10K0	T0K0	T0K0	PHILIPS	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PANASONIC	PARKER VISION	ANAREN	ANALOG DEVICES	
PART NIMBER		GRM39Y5V104Z016		GRM39C0C220J050	GRM39X7R104K016	GRM39C0G470J050	GRM39X7R102K050	GRM39X7R101J050	GRM40C0C030B50V	GRM40Y5V105Z016	69190-403	69190–402	82MMCX-50-0-1		LL1608-F4N7K	LL2012FH15NJ	dNO	BFR520	ERJ36SYJ202	ERJ3GSYJ510	ERJ3EKF2210	ERJ3EKF3322	ERJ3EKF1001	ERJ3EKF2490	ERJ3GSYJ100	020_V4	1X603	AD8032AR	STB500.641.001 V03.00
PART		0.1uF		22pF	0.1uF	47pF	1000pF	100pF	3pF	1uF	69190-403	69190-402	82MMCX-50-0-1	dNO	4.7nH	15nH	DNP	BFR520	2K	51	221	33.2K	DNP	249	10	020_V4	1X603	AD8032AR	BOARD
REFERENCE		C/R7, C/R15, C16, C17, C18	C19, C21, C22, C23, C24	C1,C3,C6,C8,C9,C12	C2,C4,C11	C5,C15	C10,C7	C13	C14	C20,C25	JP1	JP2	11, 12, 13, 14	L3,L1	L4,L2	L5	F6	01,02	R1, R3	R2	R4,R12	R5, R6, R8, R13, R14, R16	R9, R17	R10,R18	R11, R19	101	U2	U3	
QTY		10		9	3	2	2	1	1	2	1	-	4	2	2	1	1	2	2	1	2	9	2	2	2	-	,	_	
ITEM	v			2	3	4	5	9	7	8	6	10	11	12	13	14	15	16	17	18	19	70	21	22	23	24	25	76	27

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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

FIG.55C	
FIG.55B	
FIG.55A	

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For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit -1.5VL9 BLM11A1215 C6 C1 100pF 100pF **C8** C4 .01uF .01uF 20 19 18 17 16 U1 15 14 C13 1000pF 9 12 TO 10 FIG.55C FROM PE3282A C20 22pF C34 C32 FIG.55A C33 DNP<sub>2</sub> DNP DNP JP2 2 4 6 -57 8 10 ₹ FTSH-105-02-F-D C23 4.7uF JP3 L6 1 2 C23 4.7uF 3 TSW-104-08-T-S ALLOW\_CONNECT-TRUE ♥ 5 U4 6 1 R36 ± C24 2 0.1uF C23 TK11233AMTL TBD 4.7uF

FIG.55B

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Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit -1.5V L10 BLM11A1215 C2 C2 0.1uF -100uF TP1 R8 2K S R9 C8 220pF 75 **C7** 2<sup>C9</sup>11 L1 100pF Q1 BFR520 10nH 100pF R11<sub>2</sub> R10<sub>2</sub> 1 | 2 C12 6.8pF C10 100pF 3300 1K C11 3.3pF R13 1.5K . C14 1500pF - C16 R14 220 R12 13K 12pF FROM FIG.55B CR1 2 BBY51-EG327 C16 4700pF R30 1K R17 75 L12 R19 DNP R19 DNP BLM11A1215 C35 1000pF L14 J4 82nH C37 C36 82MMCX 8 U6 UPC1879GV 1000pF 1000pF GND

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FIG.55C

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Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

ITEM	QTY	TEM QTY   REFERENCE	PART	DESCRIPTION	PART NUMBER	MANUFACT.
-	-	CR1	BBY51-E6327	DIODE, VARACTOR	BBY51-E6327	SIEMENS
2	9	C1,C3,C5,C7,C9,C10	100pF	CAPACITOR, CERAMIC, 100pF, 10%, COG, 0603	GRM39C0C101K050	MURATA
3	7	C29, C2	0.1uF	CAPACITOR, CERAMIC, .1 uF, 10%, X7R, 0603	GRM39X7R104K016AD	MURATA
4	~	C4,C8,C17	.01uF	CAPACITOR, CERAMIC, .01uF, 10%, X7R, 0603	GRM39X7R103K050	MURATA
2	-	90	220pF	CAPACITOR, CERAMIC, 220pF, 5%, COG, 0603	GRM39C0C221J025	MURATA
9	-	C11	3.3pF	CAPACITOR, CERAMIC, 3.3pF, 5%, COG, 0603	GRM39C0C3R3B100V	MURATA
7	_	C12	6.8pF	CAPACITOR, CERAMIC, 6.8pF, +/25pF, COC, 0603	GRM39C0G6R8C100V	MURATA
œ	4	C13, C35, C36, C37	1000pF	CAPACITOR, CERAMIC, 1000pF, 10%, X7R, 0603	GRM39X7R102K016	MURATA
6	-	C14	1500pF	CAPACITOR, CERAMIC, 1500Pf, 10%, X7R, 0603	GRM39X7R152K016	MURATA
9	_	C15	12pF	CAPACITOR, CERAMIC, 12pF, 5%, COC, 0603	GRM39C0C120J050	MURATA
=	-	C16	4700pF	CAPACITOR, CERAMIC, 4700pF, 10%, 0603	GRM39X7R472K016	MURATA
12	2	C20,C18	22pF	CAPACITOR, CERAMIC, 22pF, 10%, COG, 0603	GRM36C0G220K050	MURATA
13	4	C22, C32, C33, C34	dNO	CAPACITOR, CERAMIC, , , , 0603		MURATA
14	3	C23,C24,C27	4.7uF	CAPACITOR, TANTALUM, 4.7 uF, 10%, 3216	T491A475K006AS	KEMET
15	3	R16,C31,R17	O OHM	RESISTOR, ZERO OHM, 0603	ERJ3GSY0R00	PANASONIC
16	<del>-</del>	JP1	FTSH-110-02-F-0	HEADER, DUAL ROW 10X2, .050X.050	FTSH-110-02-F-D	SAMTEC
17	-	JP2	FTSH-105-02-F-D	HEADER, DUAL ROW 5X2, .050X.050	FTSH-105-02-F-D	SAMTEC
<u>∞</u>	-	JP3	TSW-104-08-T-S	HEADER, SINCLE ROW 4 PIN, .100"	TSW-104-08-T-S	BERG
19	2	J5, J6	82NMCX	RF CONNECTOR	82MMCX-50-0-1	SUHNER
20	-	11	18nH	INDUCTOR, 18nH, 10%, 0805	0805CS-180XJBC	COILCRAFT
21	_	L3	0 OHM	ZERO OHM JUMPER	RM73ZIJT	KOA
-	9	L4,L6,L9,L10,L11,L12	BLM11A121S	FERRITE BEAD, 0603	BLM11A121S	MURATA
23	-	L14	82nH	INDUCTOR, 82nH, 10%, 0805	LL2012-F82NK	TOKO
24	-	Q1	BFR520	TRANSISTOR, NPN	BFR520	PHILIPS
	2	R1, R2, R3, R11, R30	*	RESISTOR, 1K, 5%, 0603	ERF3GSYJ102	PANASONIC
76	-	R4	10	RESISTOR, 10 OHM, 5%, 0603	ERJ3GSYJ1R0	PANASONIC

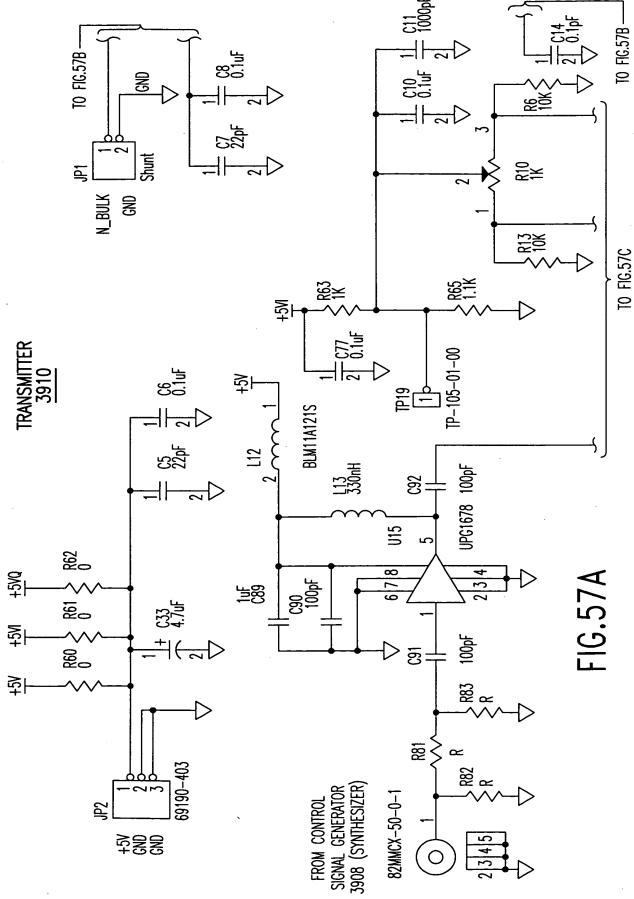
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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

		BOARD	STB500.641.008 V03.00 BOARD	3 1
NEC	UPC1678GV	IC,RF AMPLIFIER	UPC1678GV	2 1 U6
MOTOROLA	MC74LCX125DT	IC, BUFFER	74125	1 1 U5
T0K0	TK11235BM	VOLTAGE REGULATOR, 3.5V	TK11233AMTL	40 1 U4
STATEK	CXO-3M-10N-40MHZ A/I STATEK	XTAL OSC, 40MHz	CX0-3M-10N-40MHz	39   1   U2
PEREGRINE	PE3282A	IC, SYNTHESIZER	PE3282A	38   1   U1
		,	TEST POINT	37   1   TP1
PANASONIC		RESISTOR,,,0603	DNP	36 1 R37
PANASONIC	ERJ3GSY0R00	RESISTOR, ZERO OHM,0603	180	35 1 R36
PANASONIC	ERJ3GSYJ910	RESISTOR, 91 OHM, 5%, 0603	DNP	34 2 R18,R19
PANASONIC	ERJ3GSY0R00	RESISTOR, ZERO OHM,0603	DNP	33 1 R15
PANASONIC	ERJ36SYJ221	RESISTOR, 220 OHM, 5%, 0603	220	32 1 R14
PANASONIC	ERJ36SYJ152	RESISTOR, 1.5K,5%,0603	1.5K	1 1 R13
PANASONIC	ERJ36SYJ133	RESISTOR, 13K, 5%, 0603	13K	30 1 R12
PANASONIC	ERJ3GSYJ332	RESISTOR, 3.3K,5%,0603	3300	29 1 R10
PANASONIC	ERJ36SYJ750	RESISTOR, 75 OHM, 5%, 0603	75	28 1 R9
PANASONIC	ERJ36SYJ202	RESISTOR, 2K,5%,0603	ZK	7 1 R8

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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
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Including Multi-Phase Embodiments and Circuit

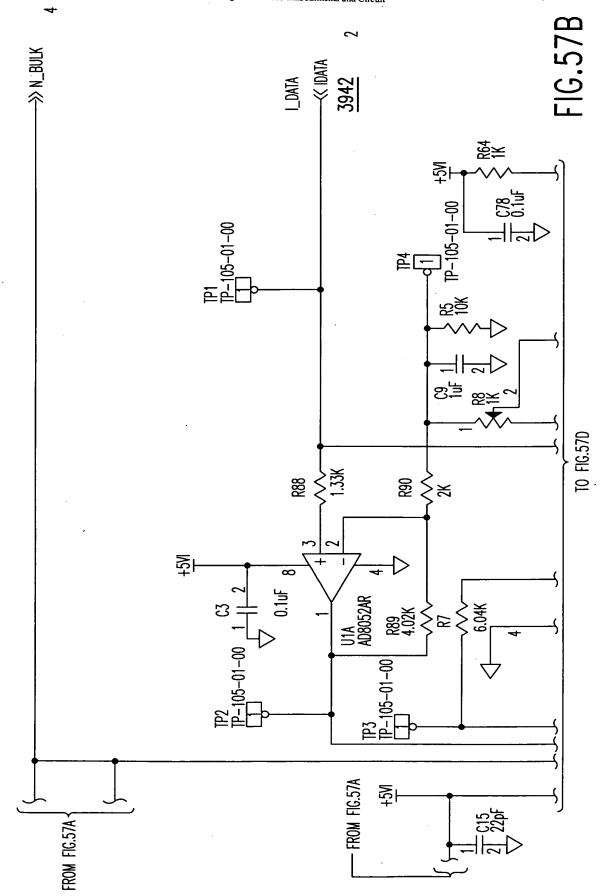
FIG.57B	FIG.57D
FIG.57A	FIG.57C

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit TO FIG.57B -0.1 F 85 Ş Shunt 종눚 ₩ ₩ TO FIG.57C &<u>÷</u> IP-105-01-00 호 <u>1</u>3 **BLM11A121S** 112 113 330nH UPC1678 100pF 632 915 FIG.57A 8 . C90 100pF **₩** 53



New Sheet Sheet 89 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600

Dr. No. 1744-0030003; Oroup Olin. 2034
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit 020\_V11 FROM FIG.57A 3920B IP-105-01-00 P-105-01-00 \$₹ Sum Port Tie 2 to 5 — NC LO GENERATOR (CONTROLS UFT FROM BASE CLOCK) 5702 Port 몽 016 일

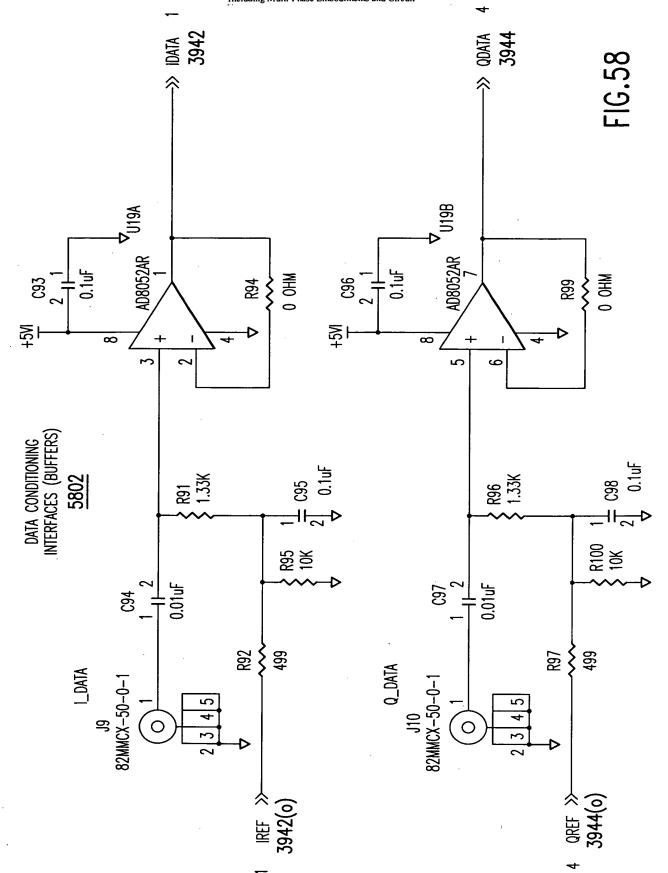
New Sheet Sheet 90 of 349

FIG.57C

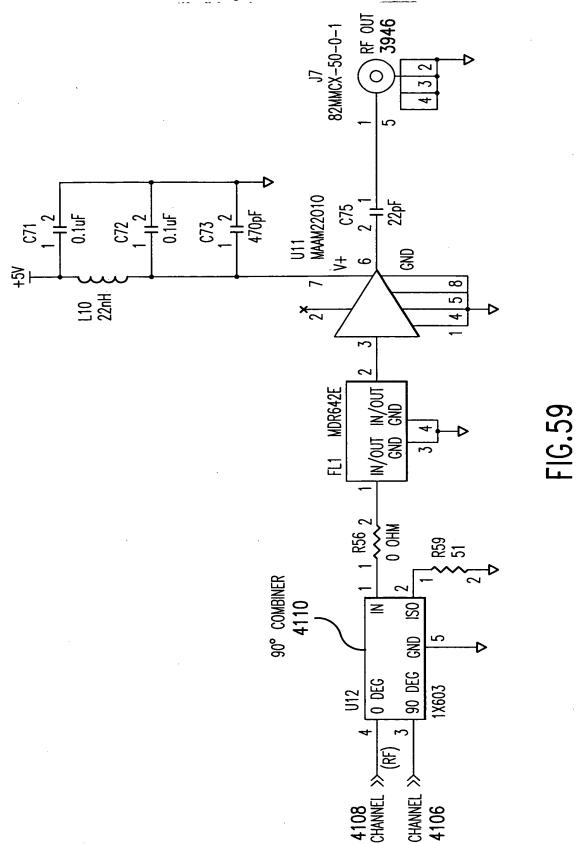
New Sheet Sheet 91 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit 2 C79 1000pr →> I CHANNEL 4106 JUMPER TO TP20 IF REQUIRED 85 ¥ #(<u>~</u>> AD1582 **₩** 통(<u>-</u> 용 ₹ FROM FIG.57B R11 1.5K 잗 0 ohm  $\approx$ &′ 후 찬 FROM FIG.57C

Replacement Sheet Sheet 92 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634

Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

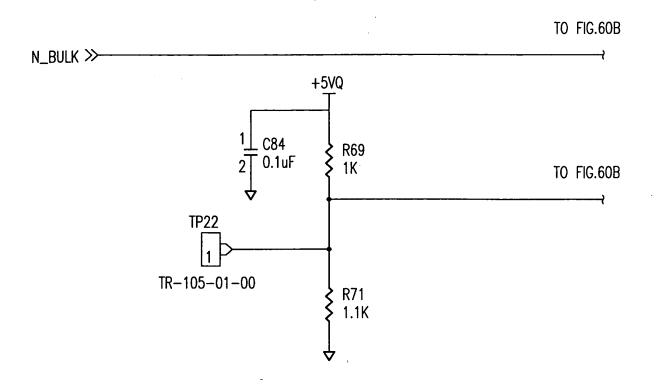


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Sheet 94 of 349
Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

,	FIG.60D	
	FIG.60C	
	FIG.60B	
	FIG.60A	

New Sheet Sheet 95 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



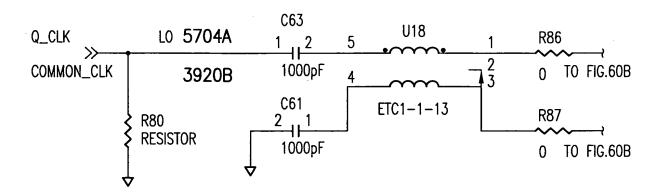
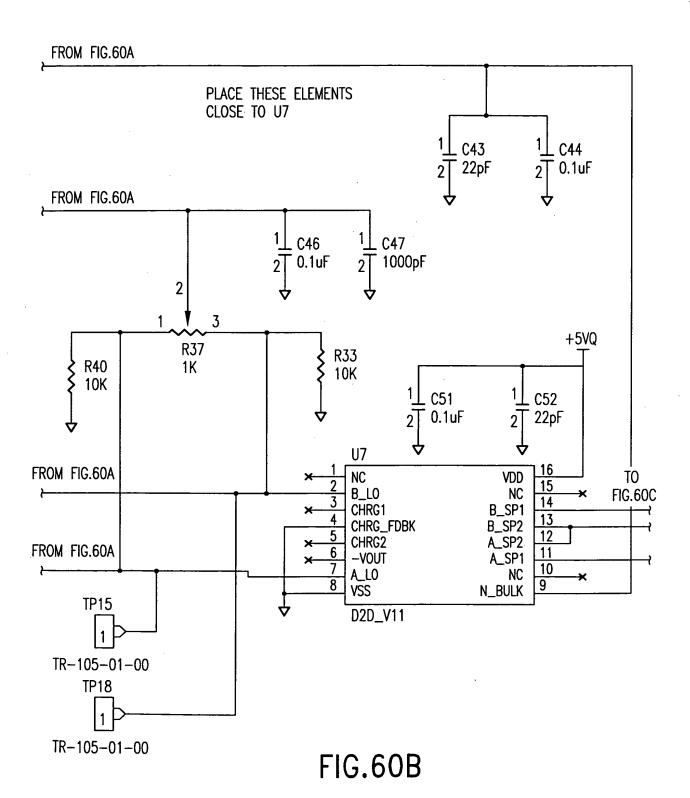


FIG.60A

New Sheet Sheet 96 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

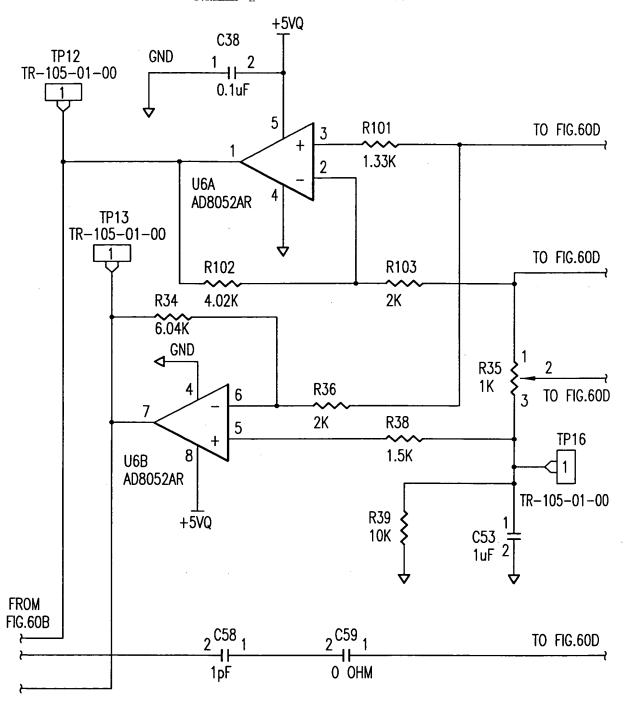
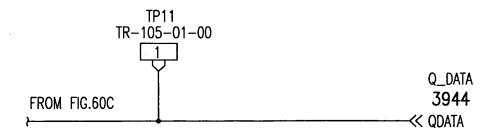


FIG.60C

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Sheet 98 of 349
Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



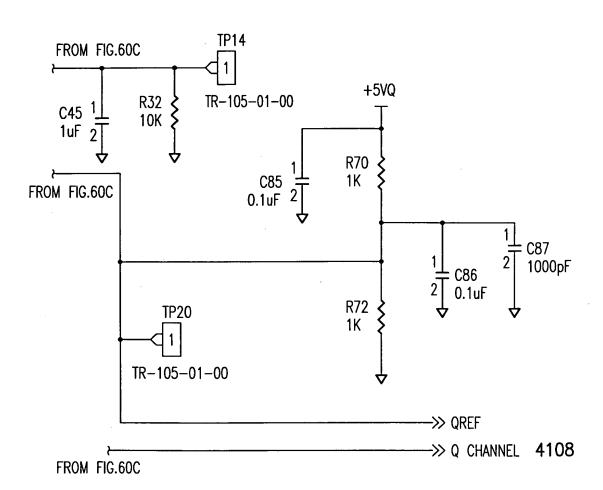


FIG.60D

FIG.61A

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

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MANUFACTURER	MIDATA	MONATA			MURATA	MURATA	MURATA		MURATA	KEMET	MURATA	MURATA	KEMET		MURATA	SOSHIN	BERG	BERG	SUHNER	COILCRAFT	MURATA		PANASONIC		PANASONIC	BOUMS	PANASONIC	PANASONIC	PANASONIC
PART NUMBER	STONYOLD VOTE	GIWASA/INTOFACTO		•	GRM39C0G220J050	GRM40Y5V105Z016	GRM39X7R102K050		GRM39C0C010B50V	T491A475K006AS	GRM39C0Cxxxx50V	GRM39C0C471J050	T491A105M016AS	ECU-V1H101JCV	GRM39X7R103K016	MDR642E	69190-402	69190-403	82MACX-50-0-1	LL1608-F22NK	BLM11A121S	LL2012-FR33K	ERJ3EKF1002		ERJ3EKF6041	3224W-1-102	ERJ3EKF2001	ERJ3EKF1501	ERJ3GSY0R00
PART	11.1	V. Iur			22pF	1uF	1000pF		1pF	4.7uF	0 ohm	470pF	1uF	100pF	0.01uF	MDR642E	Shunt	69190-403	82MMCX-50-0-1	22nH	BLM11A121S	330nH	10K		6.04K	1K	2K	1.5K	0 ohm
REFERENCE	NY 057 NY 017 87 37 57	C46.C51.C71.C72.C77.C78.	C79, C84, C85, C86, C93, C95,	860,098	C5,C7,C15,C43,C52,C75	C9, C16, C45, C53, C89	C11,C23,C25,C47,C61,C63	C80, C87	C58,C21	C82, C33	C59, C35	C73	C83	C90, C91, C92	C94,C97	FL1	JP1	JP2	17, 18, 19, 110	L10	L1 <u>2</u>	L13	R5, R6, R12, R13, R32, R33,	R39, R40, R95, R100	R34,R7	R8,R10,R35,R37	R9, R36, R90, R103	R38,R11	R56, R94, R99
M QTY	21	17			9	5	8		2	2	2	1	-	10   3	1   2	12 1	13 1	14 1	15 4	16   1	7   1	18 1	19 10		20   2	21 4	22 4	23 2	24 3
IEM		-			7	3	4		5	9	7	8	6	Ŧ	-	-	-	-		<u> </u>	-	-	-		2	2	2	7	7

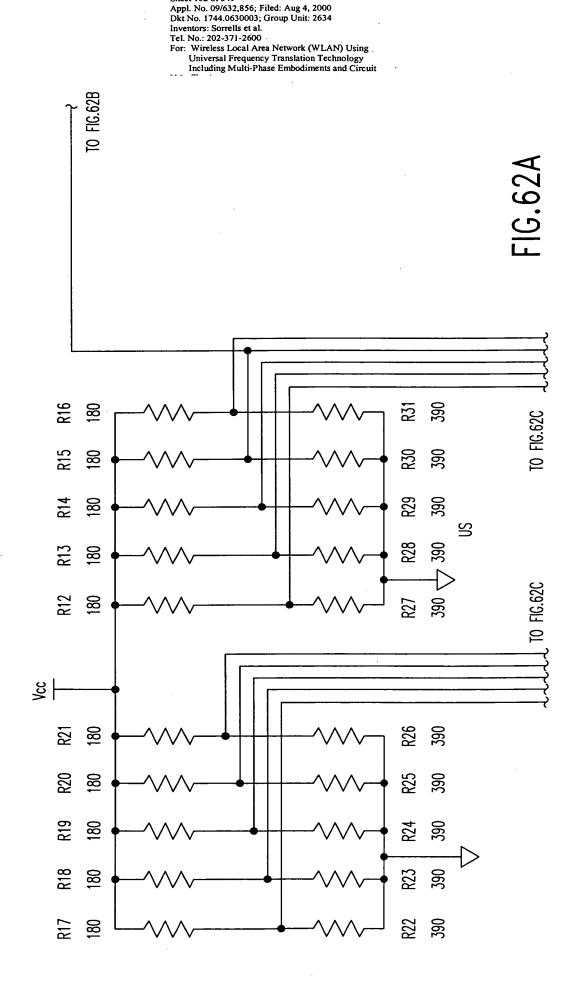
Replacement Sheet
Sheet 100 of 349
Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

			-	_																	
PANASONIC	PANASONIC		PANASONIC	PANASONIC			PANASONIC	PANASONIC	PANASONIC					ANALOG DEVICES	PARKER VISION	MACOM	ANAREN	ANALOG DEVICES	NEC	MINI-CIRCUITS	V05.10
ERJ36SYJ510	ERJ3GSY0R00		ERJ3EKF1001	ERJ3EKF1101			ERJ3EKF1331	ERJ3EKF 4021	ERJ3EKF 4990				-	AD8052AR	020_V11	MAAM22010	1X603	AD1582	UPC1678CV	ADP-2-10-75	8500.641.021
51	0		1K	1.1K	RESISTOR	R	1.33K	4.02K	499	TP-105-01-00				AD8052AR	020_V11	MAAM22010	1X603	AD1582	UPC1678	ADP-2-10-75	BOARD
R59	R60, R61, R62, R84, R85, R86,	R87	R63,R64,R66,R69,R70,R72	R71, R65	R80, R79	R81,R82,R83	R88,R91,R96,R101	R102, R89	R92,R97	TP1, IP2, IP3, IP4, IP5, IP6,	TP8, TP9, TP11, TP12, TP13,	TP14, TP15, TP16, TP18, TP19,	TP20, TP21, TP22	01,06,019	07,02	l U11	U12	014	U15	U16	,
_	7		9	7	7	3	4	2	7	34 19				3	7	-	-	-	1	1	1
25	76		27	78	73	8	31	32	33	34			_	35	36	37	38	39	40	41	42

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

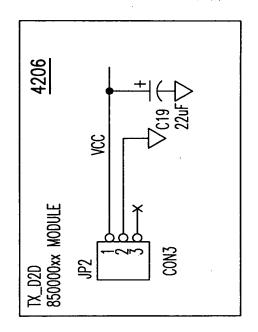
FIG.62A	FIG.62B
FIG.62C	FIG.62D
FIG.62E	FIG.62F
FIG.62G	FIG.62H
FIG.62I	

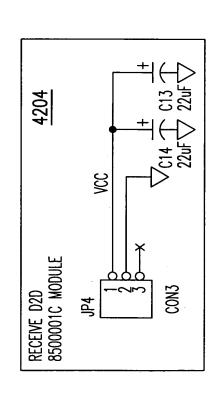
FIG. 62



New Sheet Sheet 102 of 349

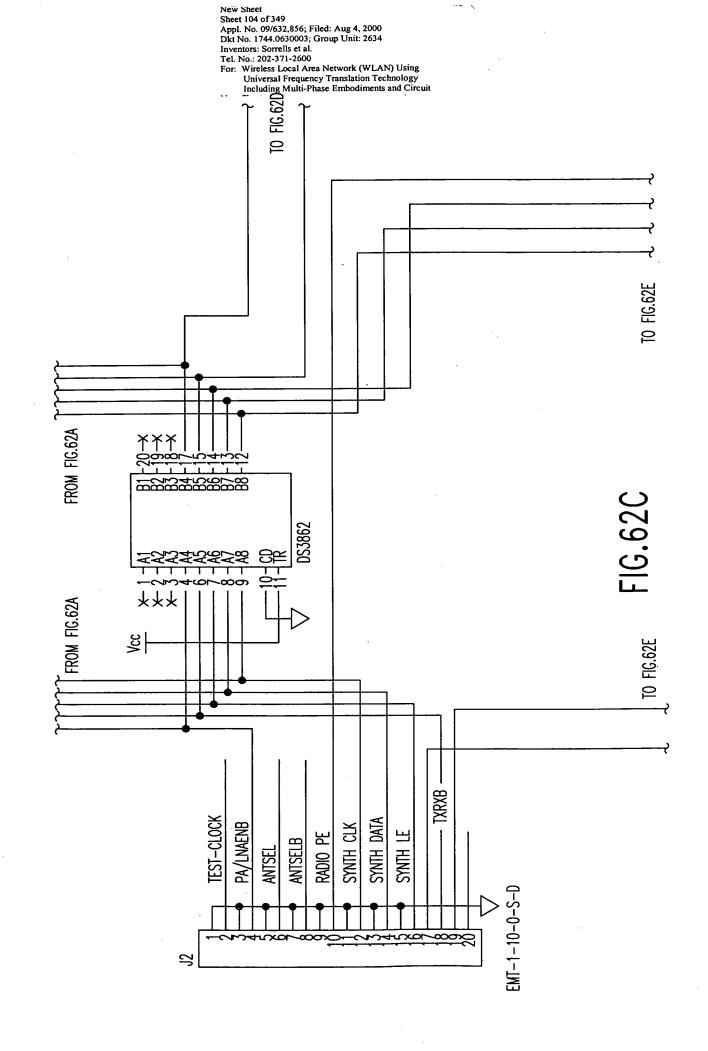
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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit





0 × 1 ≊ ≊ 4204 HEADER 7X2 JP2 DEMODULATOR 8500003K MODULE TX/RXB ဗ္ဗ FROM FIG.62A

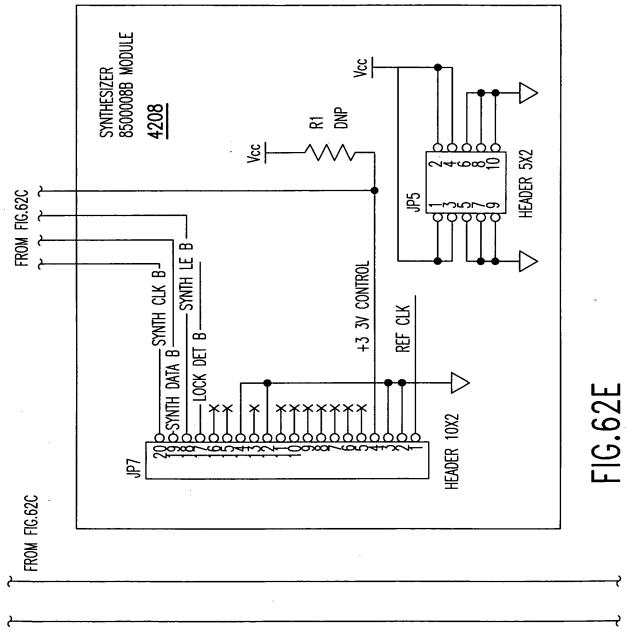
FIG.62B



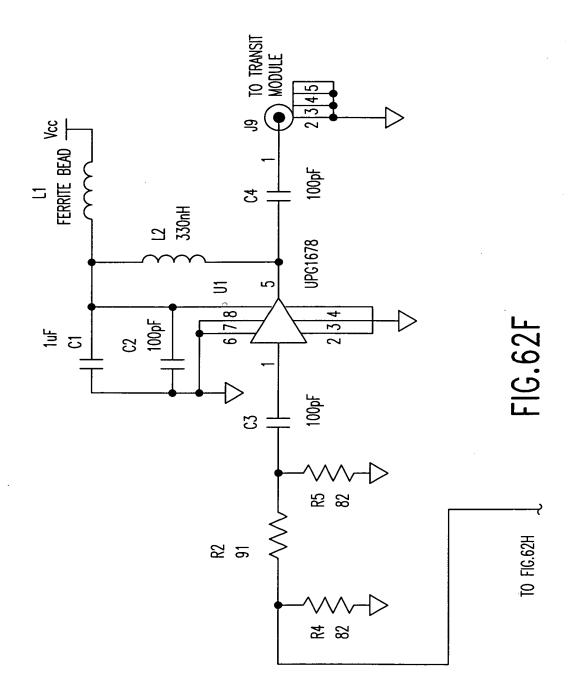
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Sheet 105 of 349
Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit 3 5 깕 HEADER 7X2 FIG.62D LNA/PA 8500002C MODULE 4212 CON3 FROM FIG.62C

New Sheet

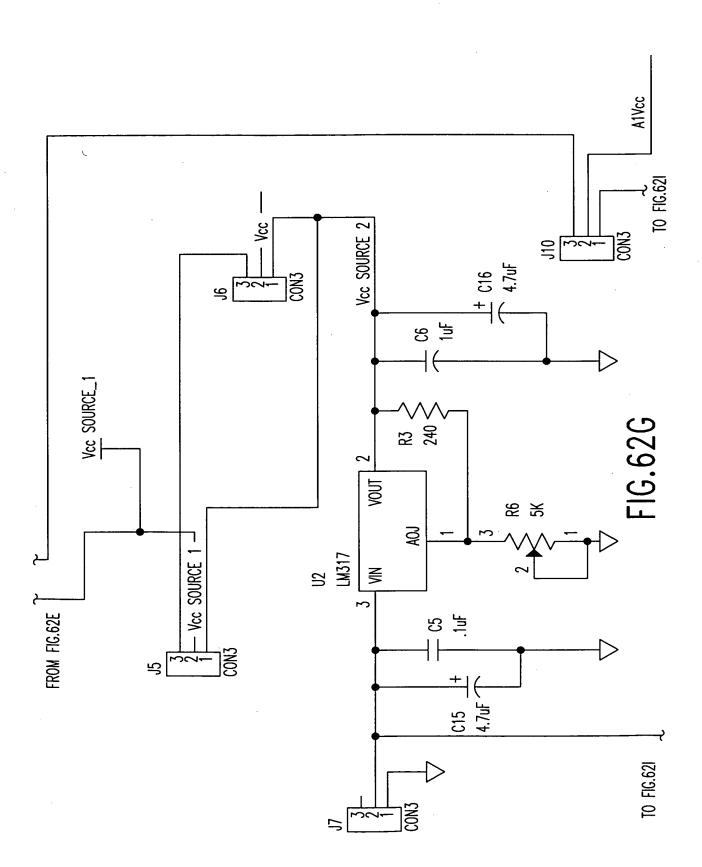
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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
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Including Multi-Phase Embodiments and Circuit



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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit 5 4 잉 FERRITE BEAD 100pF L4 330nH 3  $\infty$ ஐ 5 FIG.62H R11 82 FROM FIG.62F တ R10 < 82 4 2 SUM PORT 2

New Sneet

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Dkt No. 1744.0630003; Group Unit: 2634

Inventors: Sorrells et al.

Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using

Universal Frequency Translation Technology

Including Multi-Phase Embodiments and Circuit

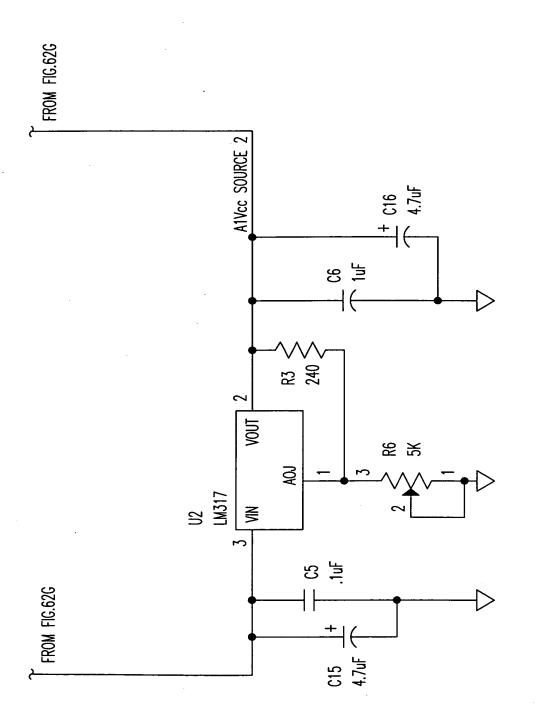
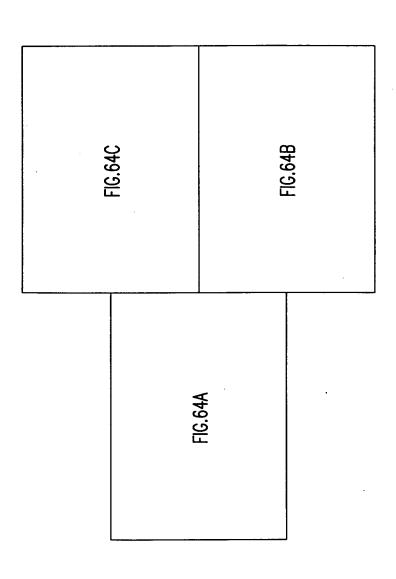


FIG.621

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

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VENDOR	MURATA	PANASONIC	MURATA	KEMET	KEMET	SAMTEK	BERG		SAMTEK	SAMTEK	SAMTEK	SUHNER	MURATA	TOKO	PANASONIC	PANASONIC	PANASONIC	PANASONIC	BOUMS	PANASONIC		PANASONIC		NEC	NATIONAL	MINICIRCUITS	NATIONAL	1
Part Number	GRM40Y5V105Z016AD	ECU-V1H101JCV	:	T491D226M020AS	T491C475M020AS	SFIAC-107-L1-S-D	69190-403		SFINC-110-L1-S-D	SFIAC-105-L1-S-D	EHT-1-10-01-S-D	82MMCX-50-0-1	BLM21A121S	LL2012-FR33K	,	ERJ-36SYJ910	ERJ-36SYJ241	ERJ-36SYJ820	3296W001502	ERJ-36SYJ181		ERJ-36SYJ391		UPC16786V	LM317T	ADP-2-10-75	DS3862WM	ST8500.641.023V0L0
DESCRIPTION	Cap, 1uF, +80-20%,0805	Cap, 100pF, 5%, COC, 0603		Cap, Tant, 22uF, 20%, 20V	Cap, Tant, 4.7uF, 20%, 20V	Receptacle, 7x2pin, .050	Header, 3pin, .100''		Receptacle, 10X2pin, .050	Receptacle, 5X2pin, .050	EHT-1-10-01-S-D Header, ribbon, 10X2pin, 2mm	Connector, RF	Ferrite Bead, 0805	Ind, 330nH, 10%, 0805	Res, 0603	Res, 91 Ohn, 5%, 0603	Res, 240 Ohm, 5%, 0603	Res, 82 Ohm, 5%, 0603	Var Res, 5K, 10%	Res, 180 Ohm, 5%, 0603		Res, 390 Ohm, 5%, 0603		IC, RF Buffer	IC, Voltage Regulator	RF Splitter	IC, Buffer	BOARD
PART	1uF	100pF	.1uF	22uF	4.7uF	HEADER 7X2	, CON3		HEADER 10X2	HEADER 5X2	EHT-1-10-01-S-0	82MMCX-50-0-1	Ferrite Bead	330nH	DNP	91	240		5K	180		390		UPC1678	LM317	ADP-2-10-75	0S3862	
TEMIQTYREFERENCE	4 C1, C6, C7, C10	2 6 C2, C3, C4, C8, C11, C12	, 2 (C5, C9	4 3 (C13, C14, C19	5 4 (C15, C16, C17, C18	6 2 JP2, JP6	9 JP4, J4, J5, J6, J7, JP9, J9,	J10, JP11	8   1 JP7	9   1 JP8	10 1 1.2	1 3 48, 111, 112	12 2 L3,L1	3 2 L4,L2	14   1   R1	15 2 R9, R2	16 2 R7,R3	7 4 R4,R5,R10,R11	18 2 R8,R6	9 10 R12, R13, R14, R15, R16,	R17, R18, R19, R20, R21	R23, R24,	R27, R28, R29, R30, R31	21 2 U5, U1	2	23 1   U3	24   1   U6	25   1



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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

FIG.64

Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit 100 OHM, L=200 mil, 8pF W=10.7 mil 50 OHM, L=100 mil, W=54 mil **OUTPUT PORTS** UPG152T SWITCH LOGIC TABLE 2 5 벙광광광 PCB MATERIAL=FR4, THICKNESS=0.031 CONTROL INPUTS VCONT2 80 OHM, L=100 mil, W=20 mil 102 OHM, L=220 mil, 2 BIAS W=10 mil FIG.64A OHM, L=200 mil 2<u>1</u> c11 110pf W=30.7 mil 몽 Vcont2 0UT2 29 4212 UPG152TA Vcont1 6 BLM21A801R PART IS "OFF" Part is "on" 11 C15 11 C16 21 100pF 21 100pF CONDITION C22 100pF IN/ONT GND 83 TXAMP PC +5\ 0 TXAMP PC ≫ 2 +5VTX >> 2 VCONT2 >> 2 7 S

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Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634

Sheet 11Appl. No. 09/632,850, . . .
Dkt No. 1744.0630003; Group Unit: 20.
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 4 ~ FIG.64B MDR642E N/OUT SNOW C20 1 2 0.1uF Se **\*** 8 L6 22nH 5 4 88 **∑** ~ D.0.1 一声 S +5VRX1 <del>+</del> ∞ L5 22nH 2 4 82  $\simeq$ FROM FIG.64A

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Inventors: Sorrells et al.

Tel. No.: 202-371-2600

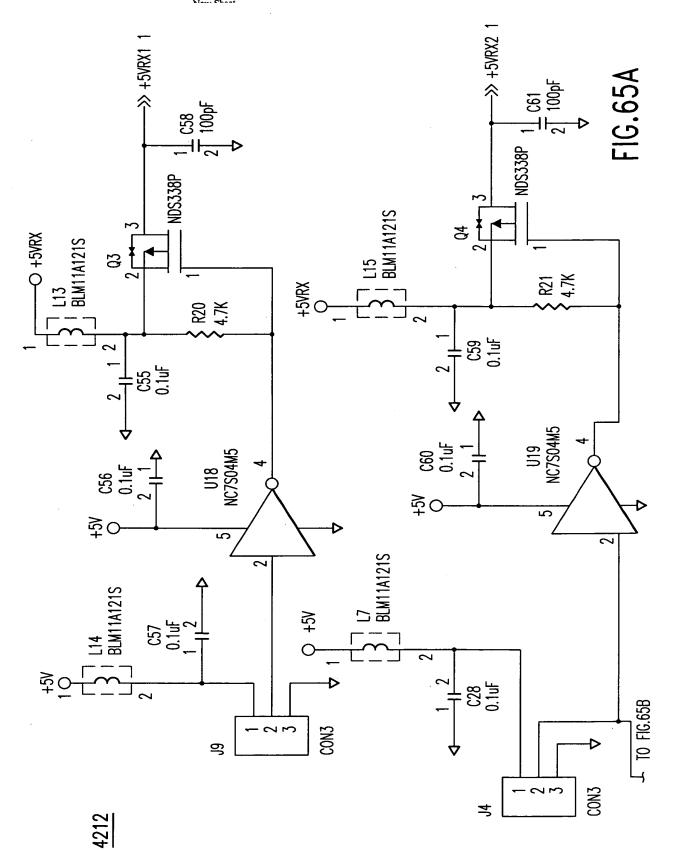
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit J1 82MMCX-50-0-1 FIG.64C R 7 R R16 R 82  $\mathbf{Z}$  $\simeq$  $\sim$ 13 22 ⊪ 4 5 8 ONS) <del>+</del> ≅ 를 22 22 32 4 5 S 9 R17 R R18 R19 R FROM FIG.64A

New Sneet Sheet 115 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

	FIG.65C	FIG.65E
FIG.65A	FIG.65B	FIG.65D

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Inventors: Sorrells et al.
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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

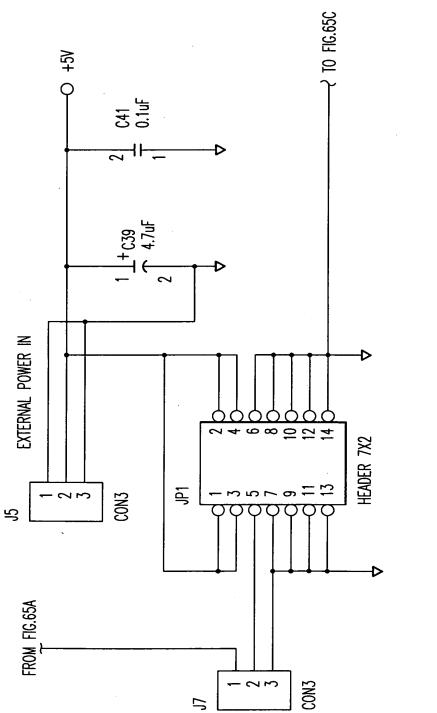
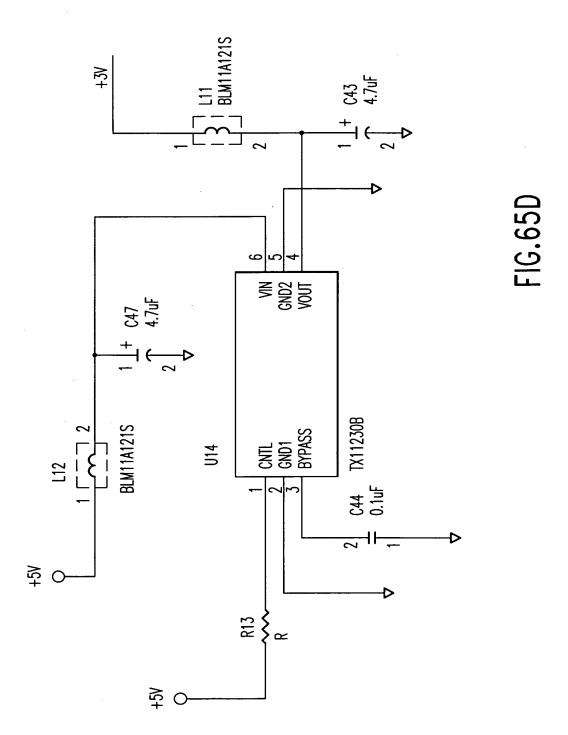


FIG.65B

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

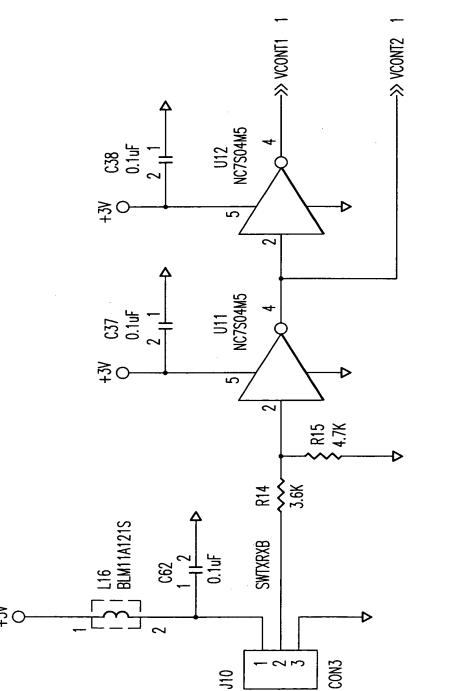


FIG.65E

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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

C1, C2, C C38, C4( C56, C5 C10, C7	C1, C2, C3, C5, C6, C17, C18,				
0,00	רדי אדי אדי מני	0.1uF	MURATA	.1uF,0603,X7R,20%,16V	GRM39X7R104M016
0, 2,	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
2     3	C38, C40, C41, C44, C48, C55,				
	C56, C57, C59, C60, C62				
اکا		330pF	MURATA	330pF,0603,C0G,10%,50	GRM39C0G331K050
ادا		22pF	MURATA	22pF,0603,C0C,10%,50	GRM30C0G220K050
ŀ	C8, C9, C23, C24	470pF	MURATA	470pF,0603,C0C,10%,50	GRM39C0C471K050
$\sim$	C11, C13, C25, C26, C27, C46	10pF	MURATA	10pF,0603,C0C,10%,50	GRM39C0C100K050
l		8pF	MURATA	8pF, 0603, COC, 10%, 50	GRM39C0C080K050
9	C15, C16, C21, C22, C50, C54	100pF	MURATA	100pF,0603,C0C,10%,50	GRM39C0C101K050
C58, C61					
16-2	C39, C43, C47	4.7uF	PANASONIC	4.7uF TANTALUM,16V	ECS-T1CY475R
		33pF	MURATA	330pF,0603,C0C,10%,50	GRM3C0G330K050
FL1,FL2		MDR642E	NIHSOS	2.4-2.5GHz BPF	MDR642E
!		HEADER 7X2	SAMTEC	DUAL ROW, 7 PINS PER ROW	FTSH-107-01-F-D
_	J1, J2, J3	82MMCX-50-0-1	SUHNER	RF CONNECTOR	82MMCX-50-0-1
_	14, 15, 16, 17, 19, 110	CON3	BERG	3 PIN HEADER W RETENTIVE LEG	69190-403H
		BLM21A601R	MURATA	600 OHMS@100MHz,500mA FERRITE BEAD	BLM21A601R
	12,13,15,16	22nH	COILCRAFT	22nH,0805CS (2012),5%	0805CS-220X-BC
	.7,L8,L9,L11,L12,L13,L14,	BLM11A121S	MURATA	RF BEAD	BLM11A121S
	15,L16				•
	01,02,03,04	NDS336P	NATIONAL	P-CHANNEL FET	NDS336P
	R1, R2, R5, R6, R7, R9, R11,	R	PANASONIC		
	R13,R16,R17,R18,R19				
		100	PANASONIC	0603,100,5%,1/16W	ERJ-36SY-J-101
C 7	R10, R12, R15, R20, R21	4.7K	PANASONIC	0603, 4. 7K, 5%, 1/16W	ERJ-3GSY-J-472

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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

	_	-				_					
ERJ-36SY-J-362						MAAM22010	UPG152TA	NC7S04M5	TK11230B	RF2128P	B500.641.024 VOL.
0603,3.6K,5%,1/16W	L=100 MIL, W=20 MIL   80 OHM, L=100 MIL, W=20 MIL	L=100 MIL,W=54 MIL   50 OHM,L=100 MIL,W=54 MIL	102 OHIN, W=10 MIL   102 OHIN, L=220 MIL, W=10 MIL	L=200 MIL, W=30.7 MIL 67 OHM, L=200 MIL, W=30.7 MIL	I, L=200 MIL, W=10.7MIL   100 OHM, L=200 MIL, W=10.7 MIL	2.4-2.5 GHz LNA	RF SWITCH	INVERTER	VOLTAGE REGULATOR	MEDIUM POWER LINEAR AMPLIFIER	BOARD
PANASONIC	MIL,W=20 MIL	MIL,W=54 MIL	MIL, W=10 MIL	MIL,W=30.7 MIL	MIL, W=10.7MIL	MACOM	NEC	NATIONAL	T0K0	RFMD	
3.6K	80 OHM, L=100	50 OHM, L=100	102 OHM, L=220	67 OHM,L=200	100  OHM, L = 200	MAAM22010	UPC152TA	NC7S04M5	TKN11230B	RF2128P	
R14	11	172	13	T4 ·	15	102, 103, 106, 107	104	U11,U12,U16,U18,U19	114	117	
-	-	_	-	-	-	4	_	5	_	-	
	2	23	24	25	26	77	28	29	8	31	32

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

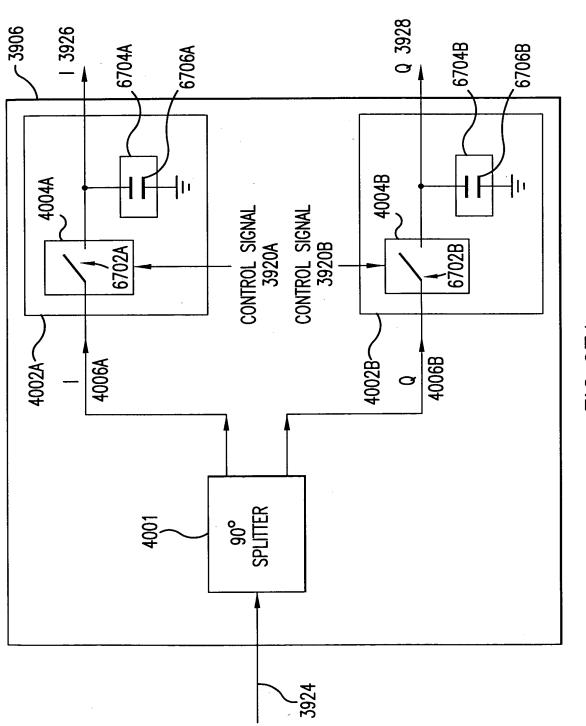


FIG.67A

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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
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Including Multi-Phase Embodiments and Circuit

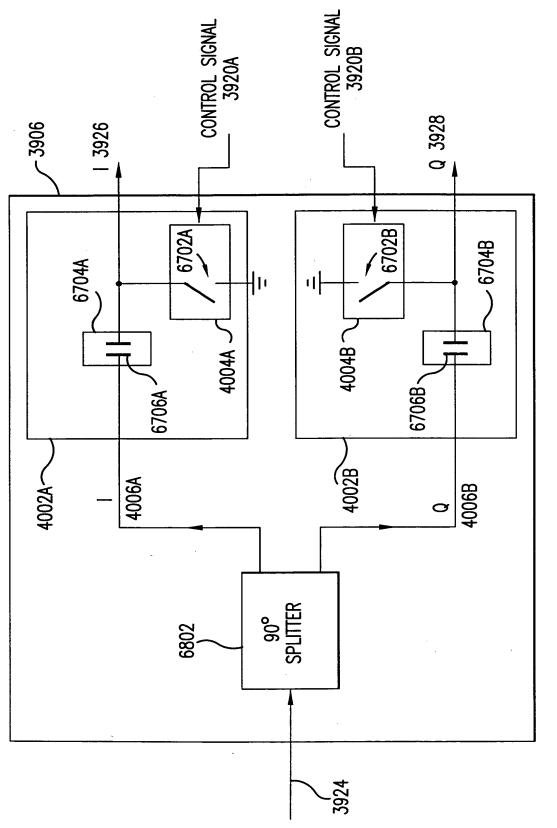
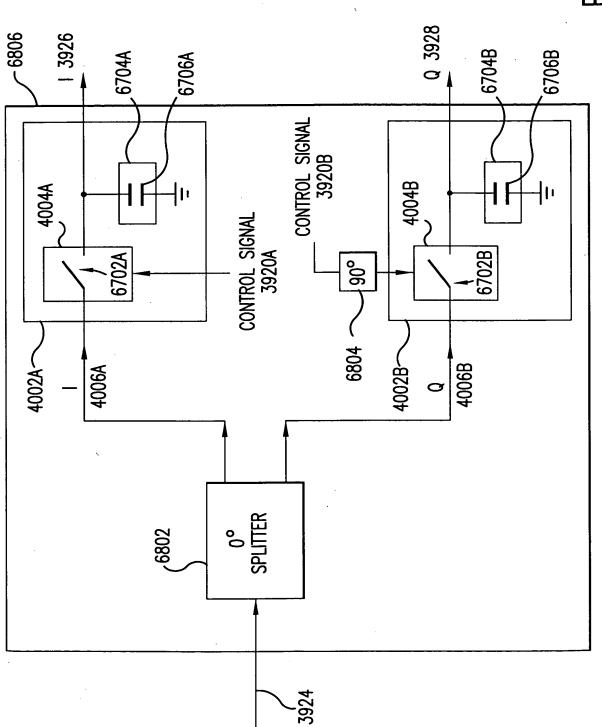


FIG.67B

FIG.68A



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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

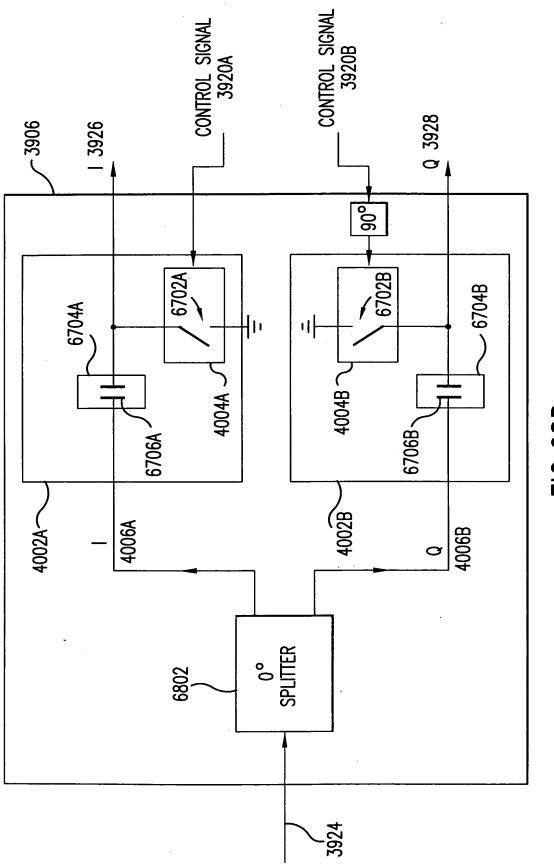
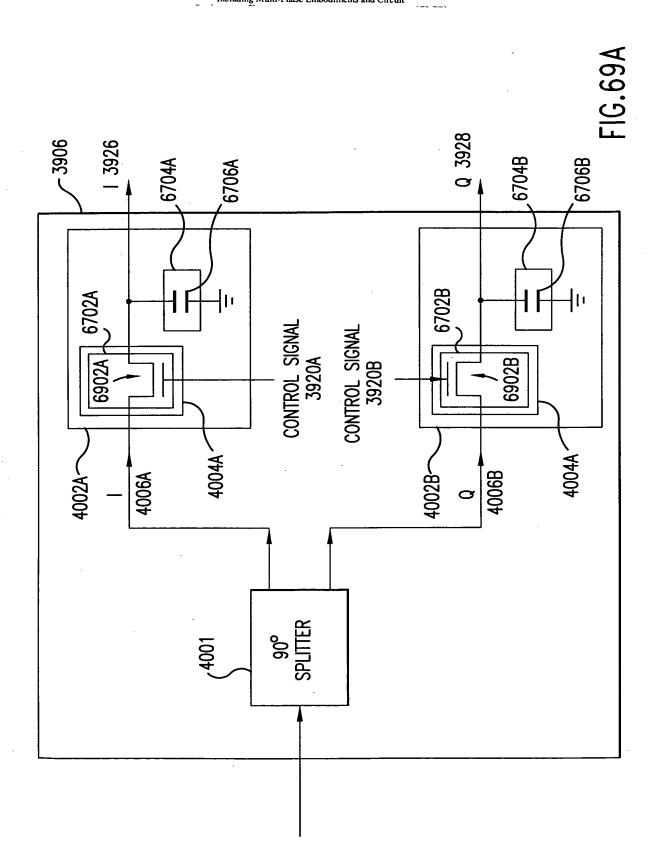


FIG.68B

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit CONTROL SIGNAL 3920B CONTROL SIGNAL 3920A FIG.69B Q 3928 .3306 3926 4004B 6702B 6702A 6704A 6704B 6902B ~ 6902A 4004A 6706B 4006A

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For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

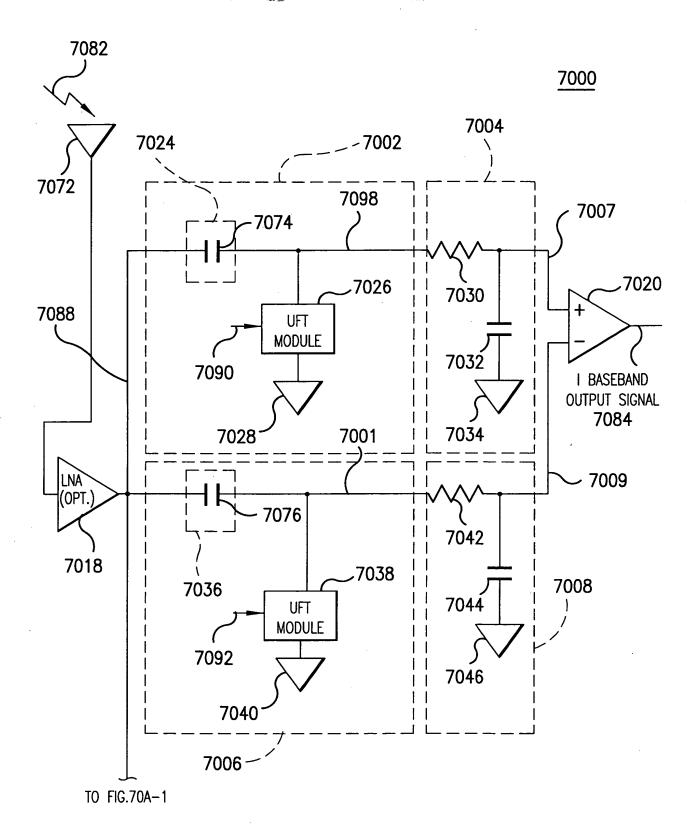
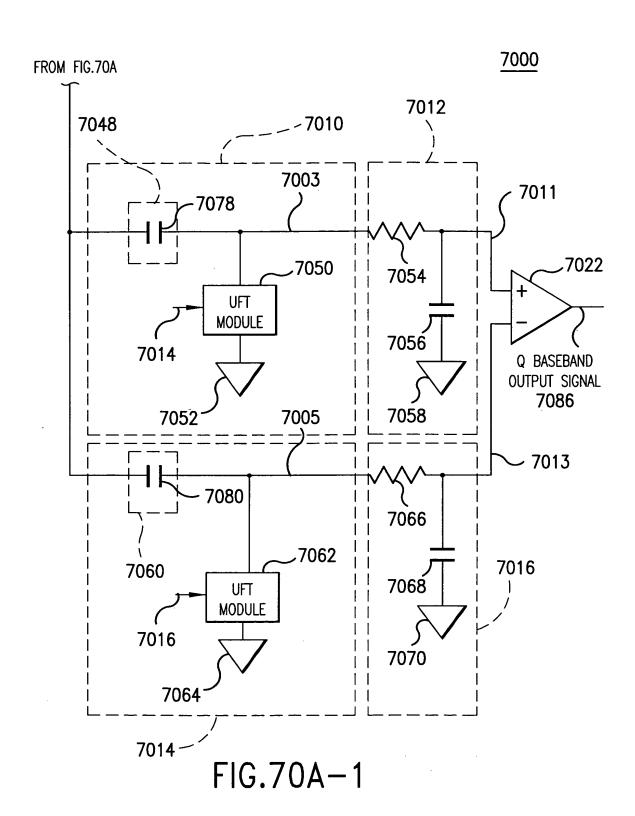


FIG.70A

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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

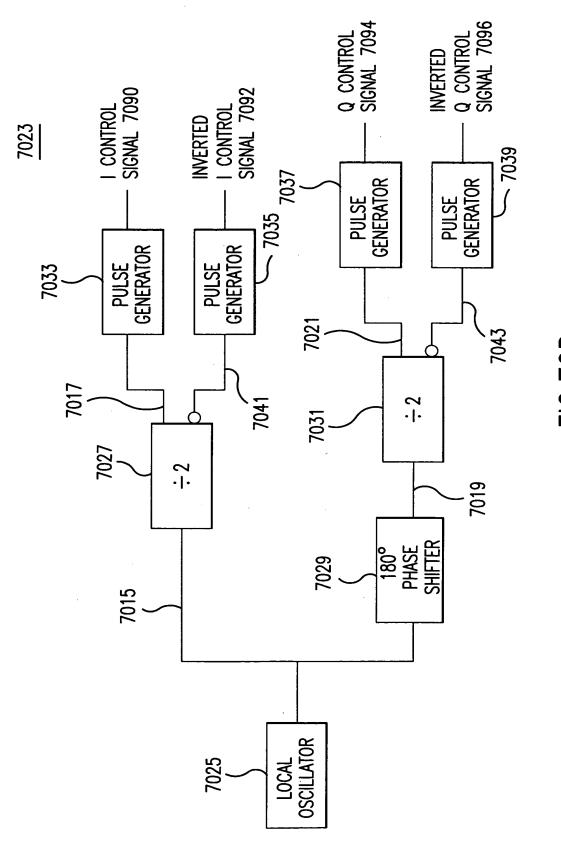


FIG.70B

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Inventors: Sorrells et al.

Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

LOCAL OSCILLATOR SIGNAL 7015

HALF FREQUENCY LO SIGNAL 7017

PHASE SHIFTED LO SIGNAL 7019

HALF FREQUENCY PHASE SHIFTED LO SIGNAL 7021

I CONTROL SIGNAL 7090

INVERTED I CONTROL SIGNAL 7092

Q CONTROL SIGNAL 7094

INVERTED Q CONTROL SIGNAL 7096

COMBINED CONTROL SIGNAL 7045

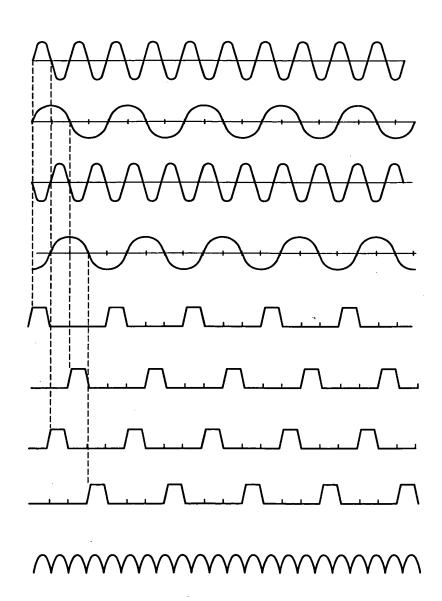


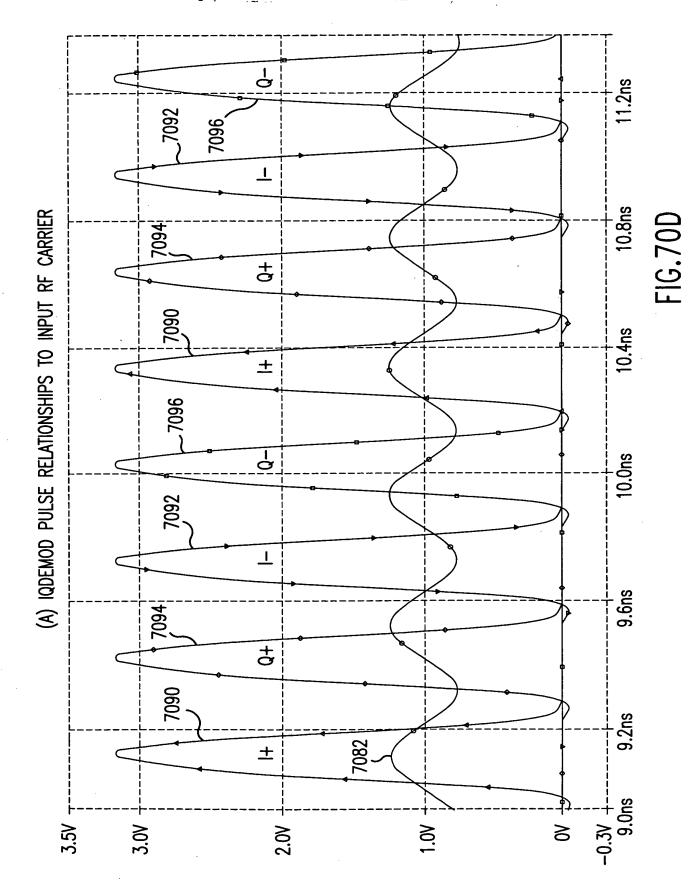
FIG.70C

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Inventors: Sorrells et al.

Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

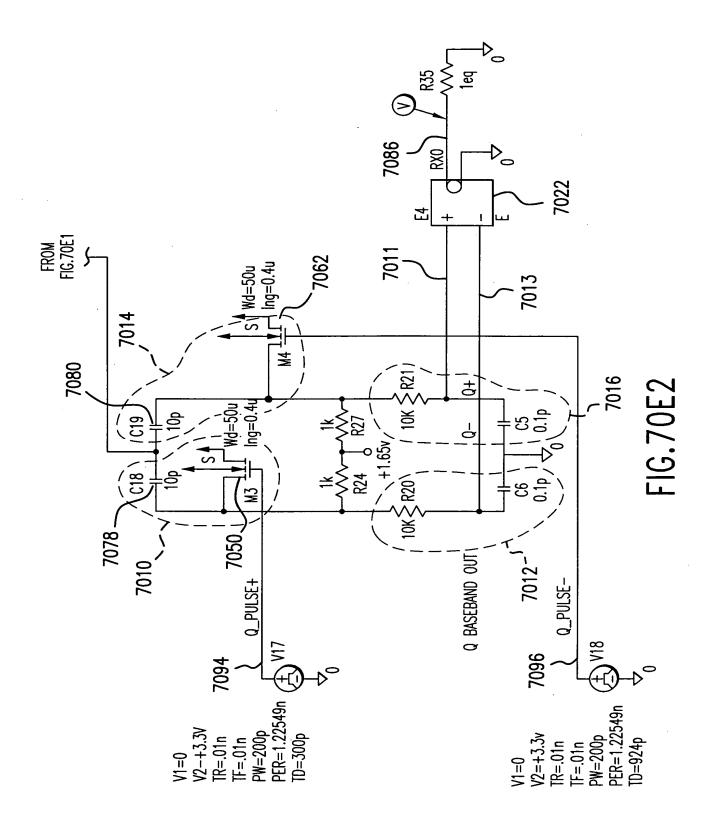


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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit \$5 \$ 1eq CONTINUE FIG.70E2 7084 ≊ 7076 C13 FIG.70E1 7074 I BASEBAND OUT PULSE+ PULSE-22  $\aleph$ 7090 TR=.01n F=.01n 25 ≥ ₽ 1e 0=0 QPSK

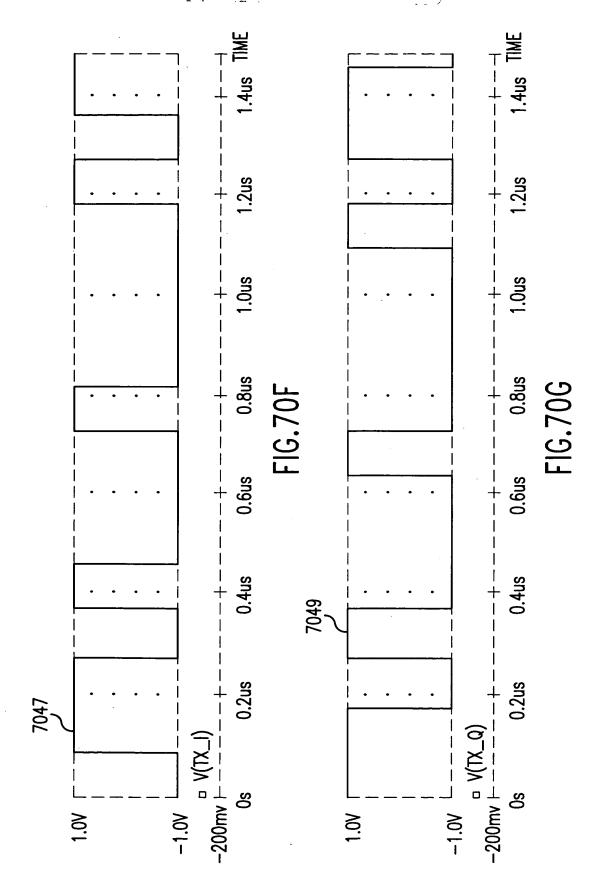
Replacement Sheet

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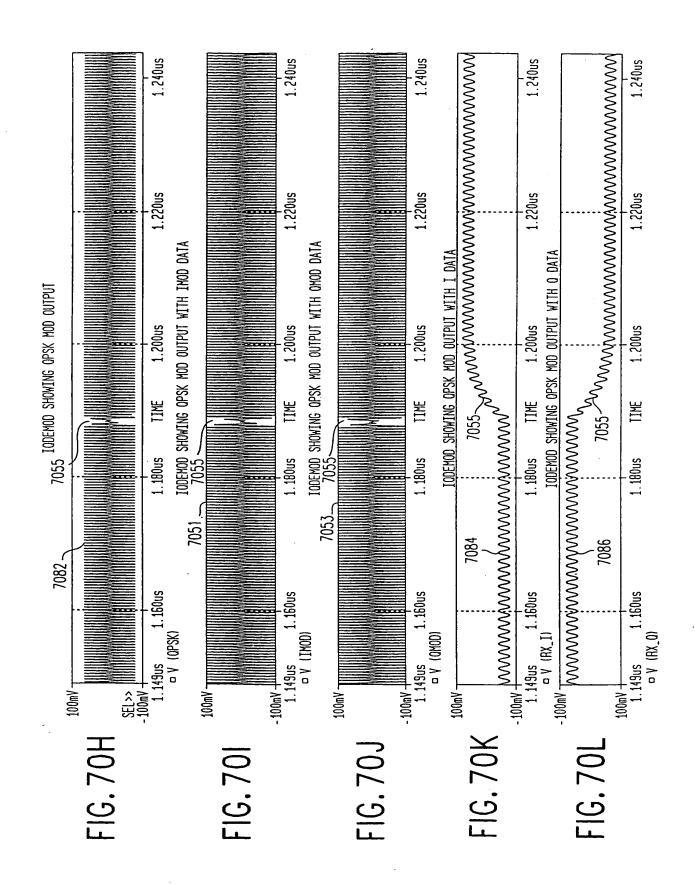
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
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Including Multi-Phase Embodiments and Circuit



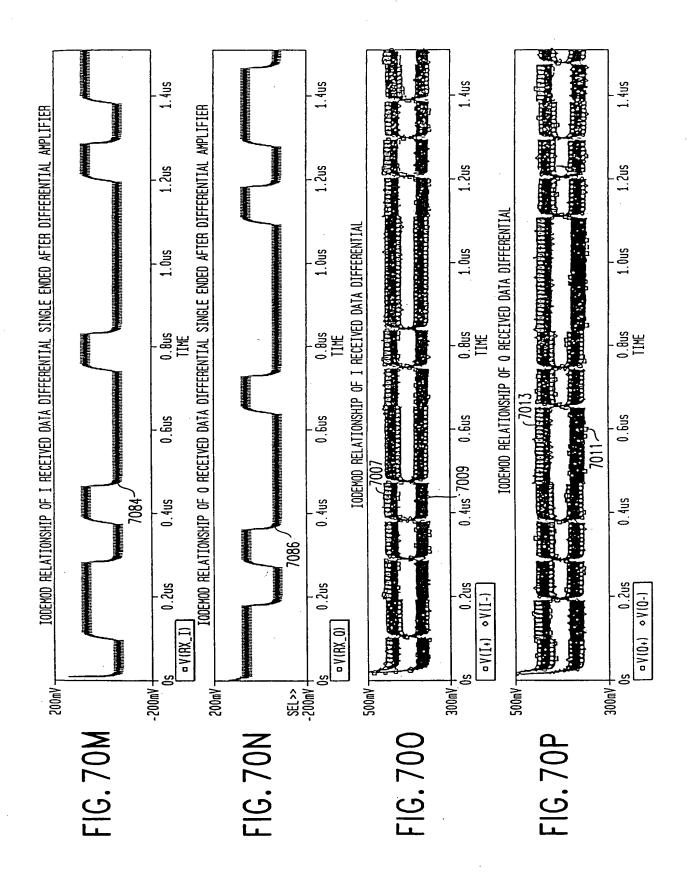
Replacement Sheet
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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



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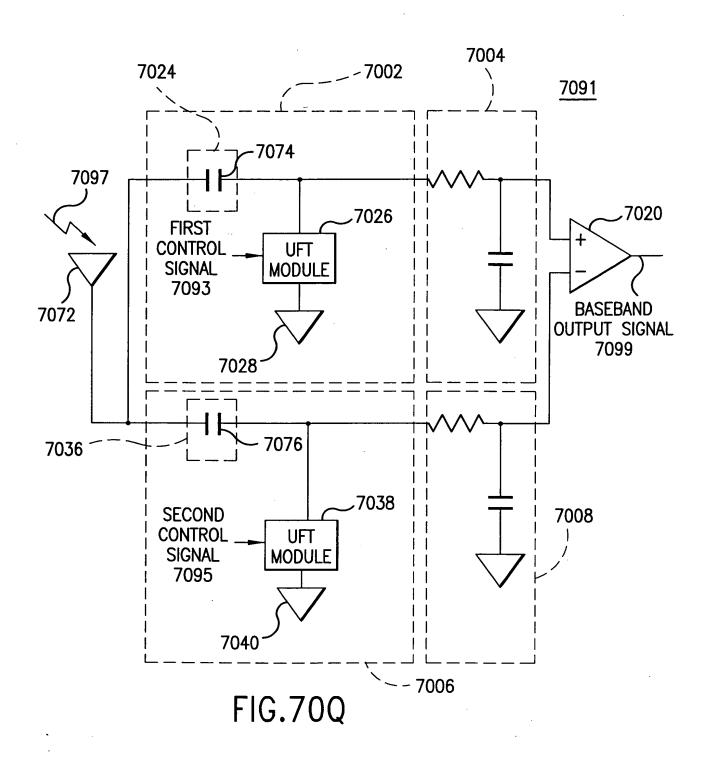
Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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Inventors: Sorrells et al.

Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

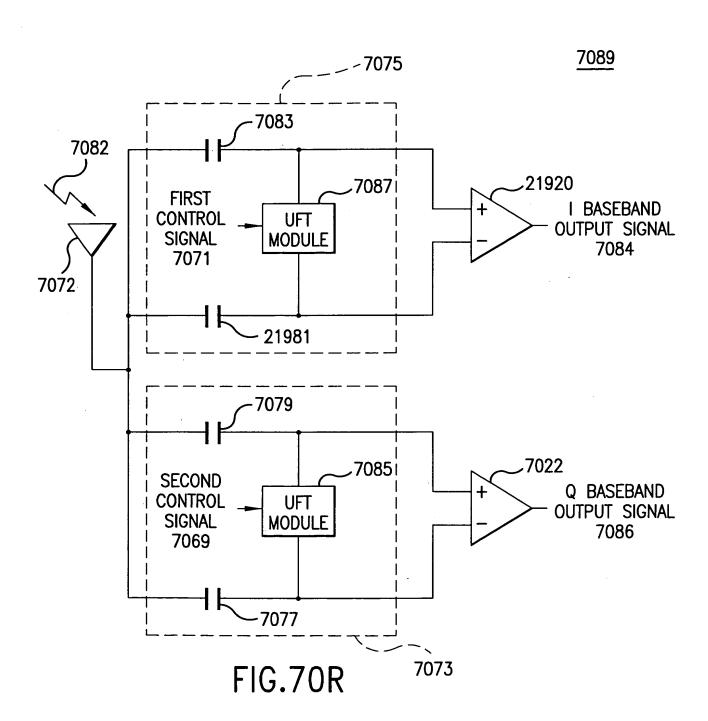


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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.

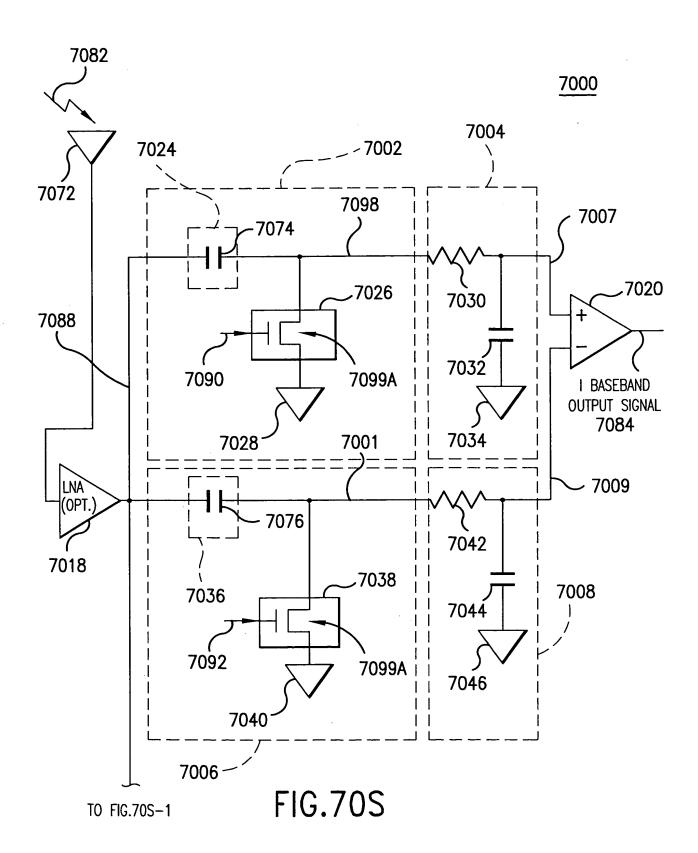
Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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For: Wireless Local Area Network (WLAN) Using

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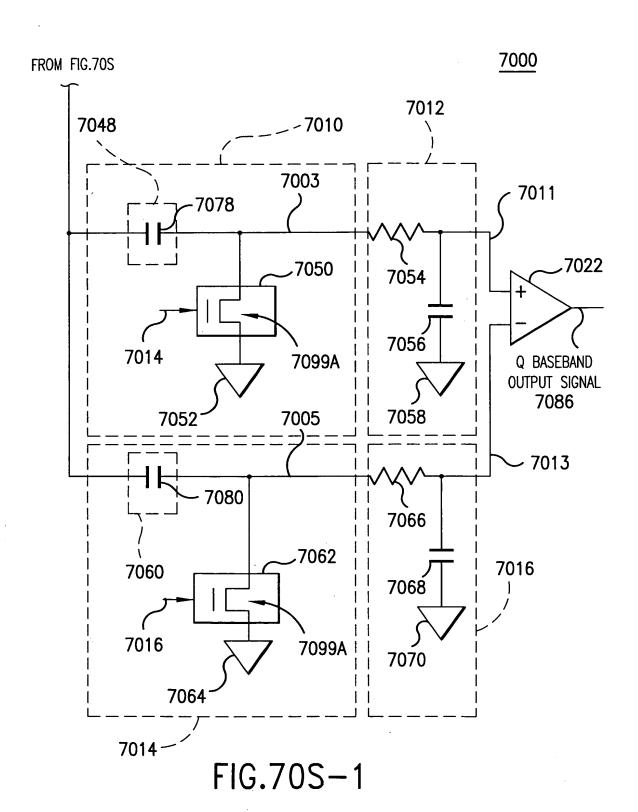
Inventors: Sorrells et al.

Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using

Universal Frequency Translation Technology

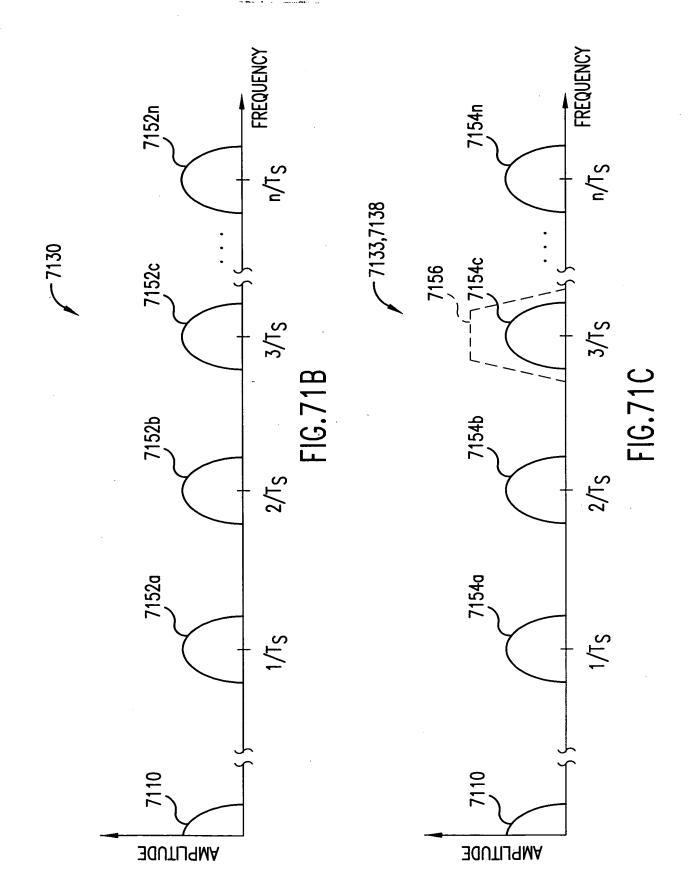
Including Multi-Phase Embodiments and Circuit



Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit OUTPUT SIGNAL 7140 7102 7136 7132 7130 7128 7124 7148 7150 7120 CNTL SIGNAL 7127 PULSE GENERATOR PULSE GENERATOR 7110 BASEBAND SIGNAL CNTL SIGNAL 7123-

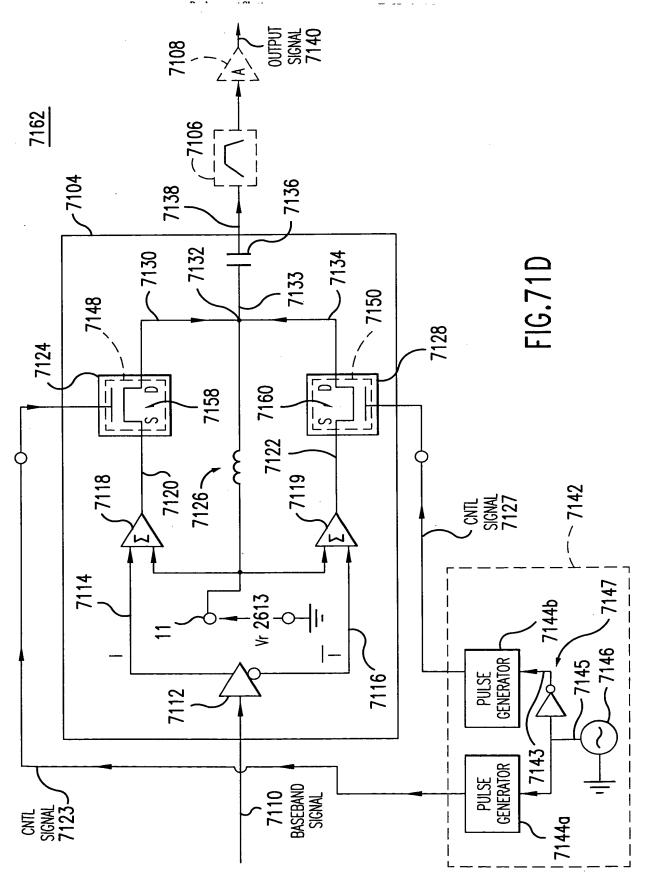
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Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Replacement Sheet
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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

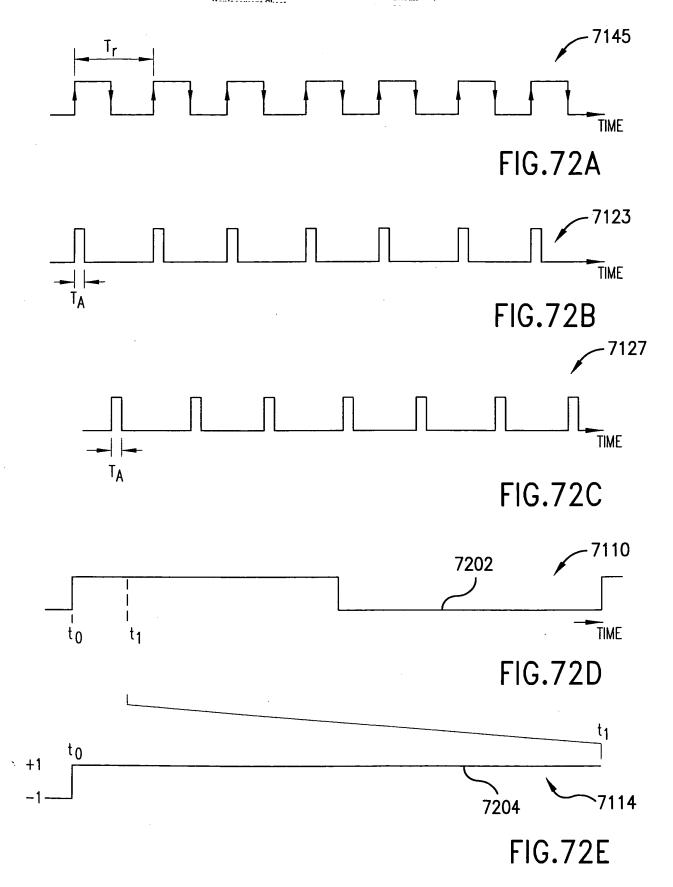


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For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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Inventors: Sorrells et al.
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Inventors: Sorrells et al.

Tel. No.: 202-371-2600
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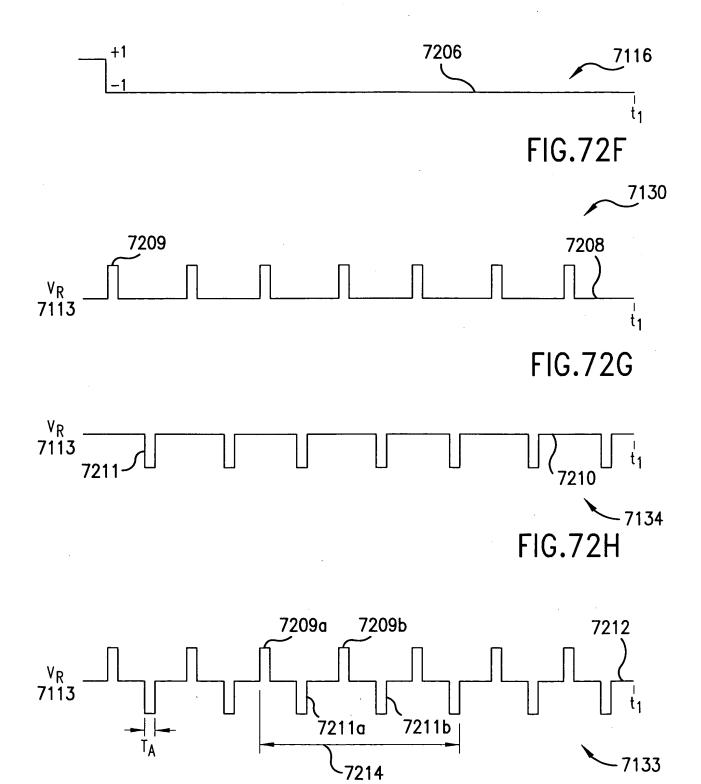


FIG.721

Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit 1.87GHz 7218h 1.50GHz SQUARE WAVE FREQUENCY = 200Mhz 7218F 7218e\_ FIG.72J FREQUENCY 1.00GHz 7218d APERTURE = 500psFUNDAMENTAL CLOCK = 200Mhz (5<sup>th</sup> SUBHARMONIC) /218c ☐ v (SQUARE\_WAVE) 7218b<sub>-</sub> 0.50GHz 218a > \_ 똥 500mV 250mV 8

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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit OUTPUT SIGNAL 7322 7302 7320 7132 FIG.73A 7124 7148 7128 7150 7118 7316~ CNTL SIGNAL 7127

> 7306 BASEBAND SIGNAL

CNTL SIGNAL 7123CONTROL SIGNAL GENERATOR

FREQUENCY 7328  $2/T_S$ 7324a 7326b —

**AMPLITUDE** 

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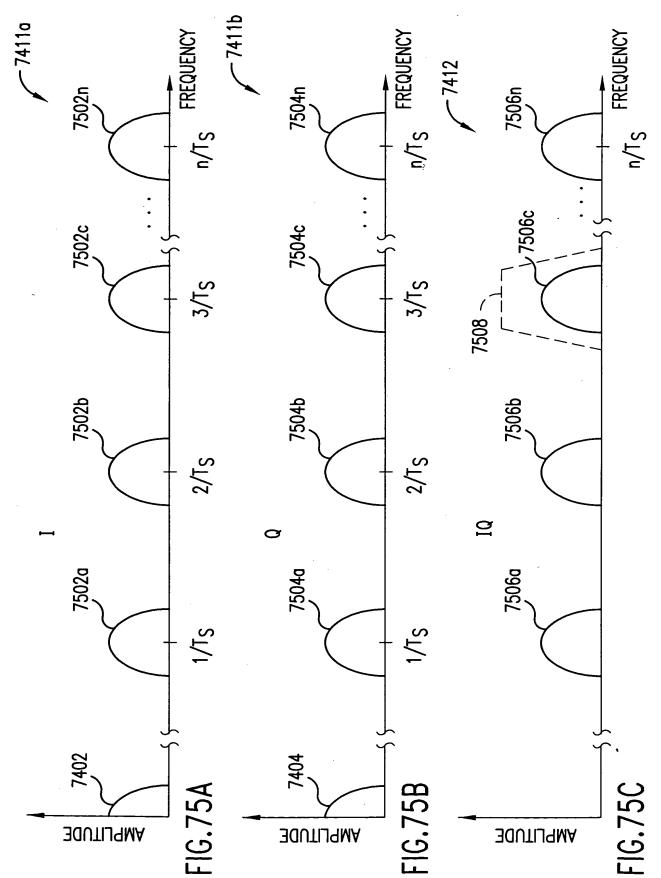
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit FIG.74 7408 Vr 7406 10 0

Replacement Sheet

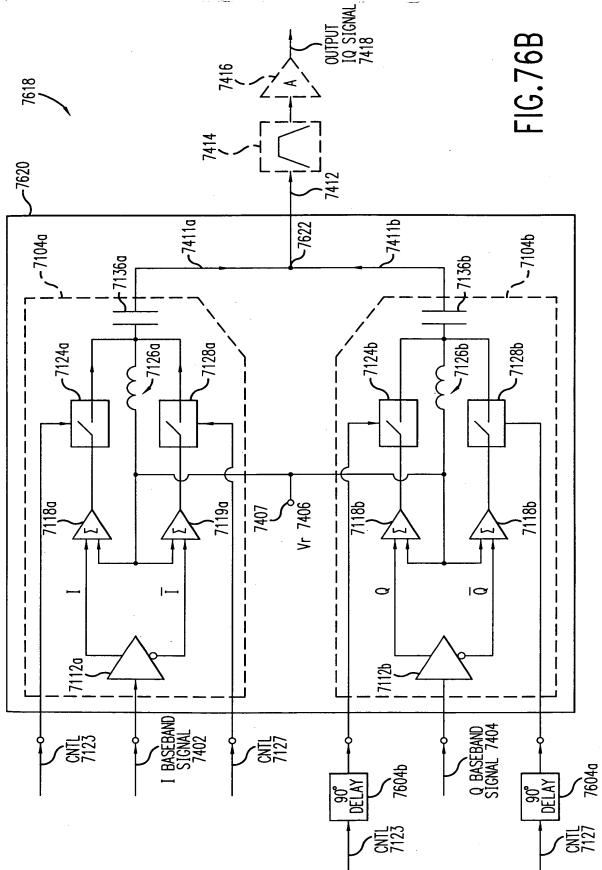
Replacement Sheet Sheet 153 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

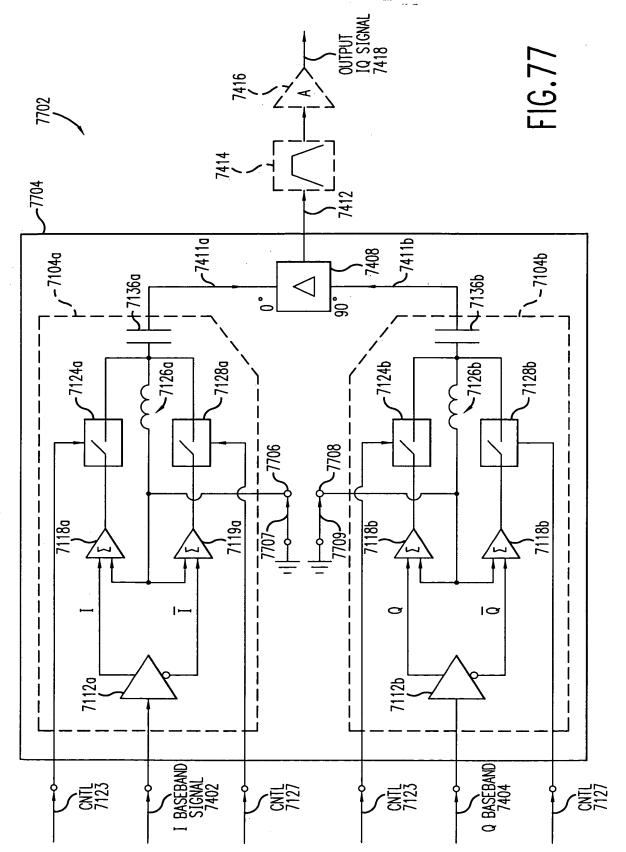


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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit **FIG.76A** 909/ 7136b Vr 7406 7118b O 10

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

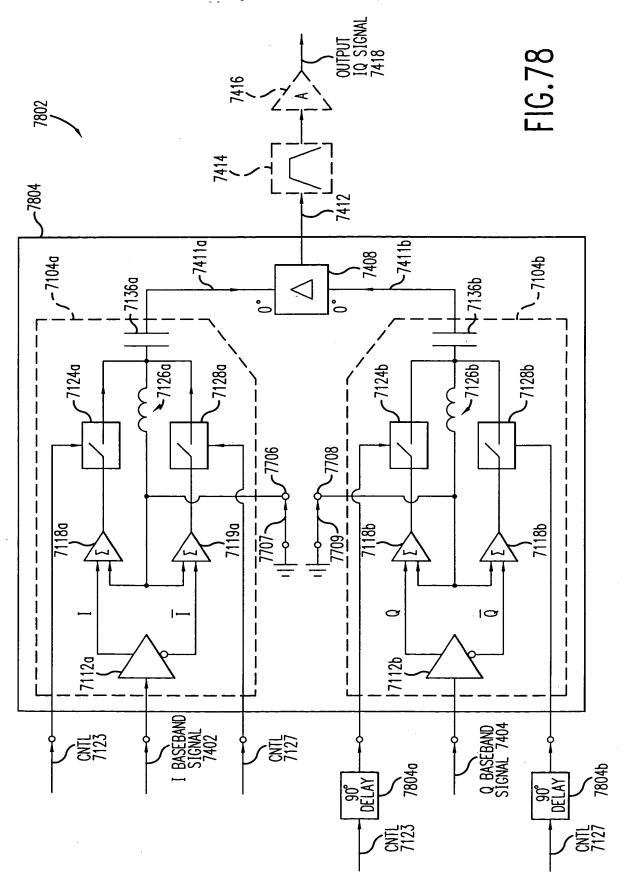


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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

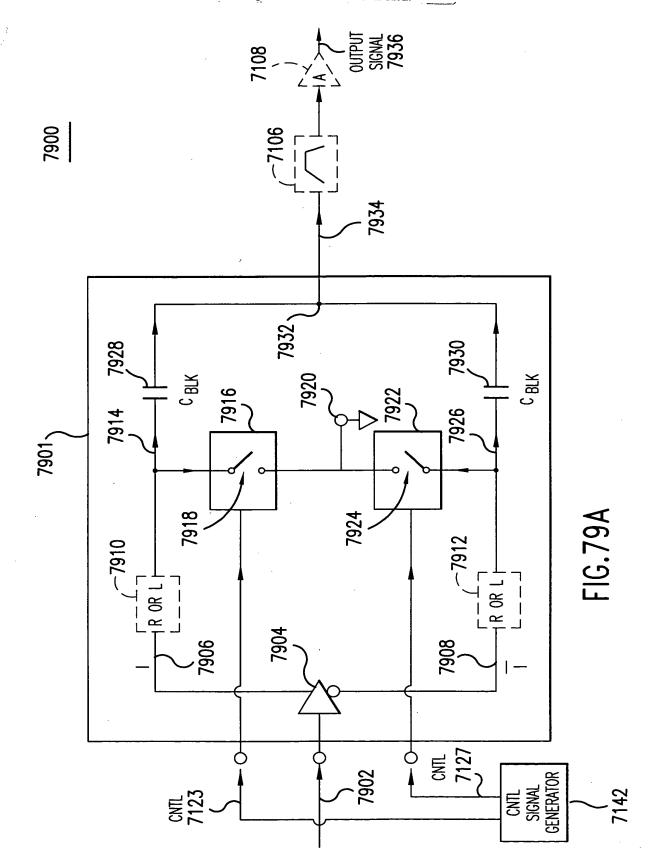


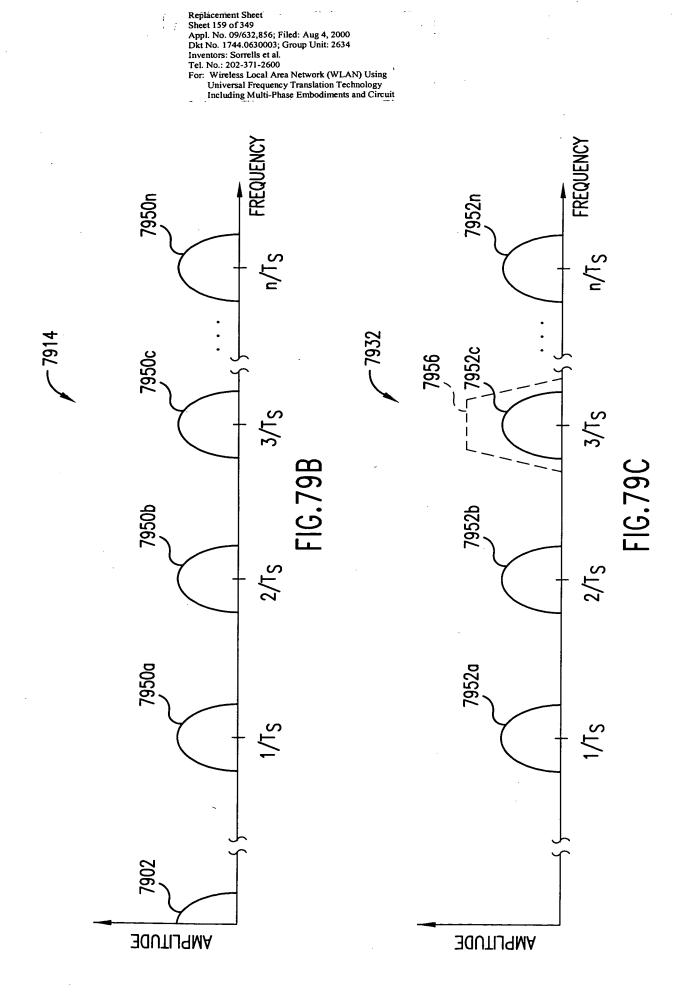
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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

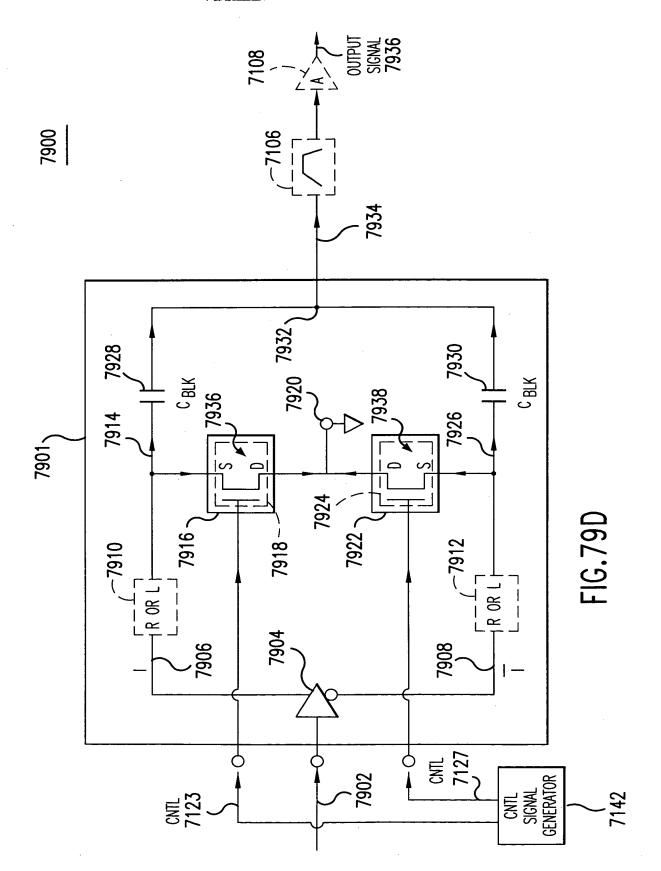


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Inventors: Sorriells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



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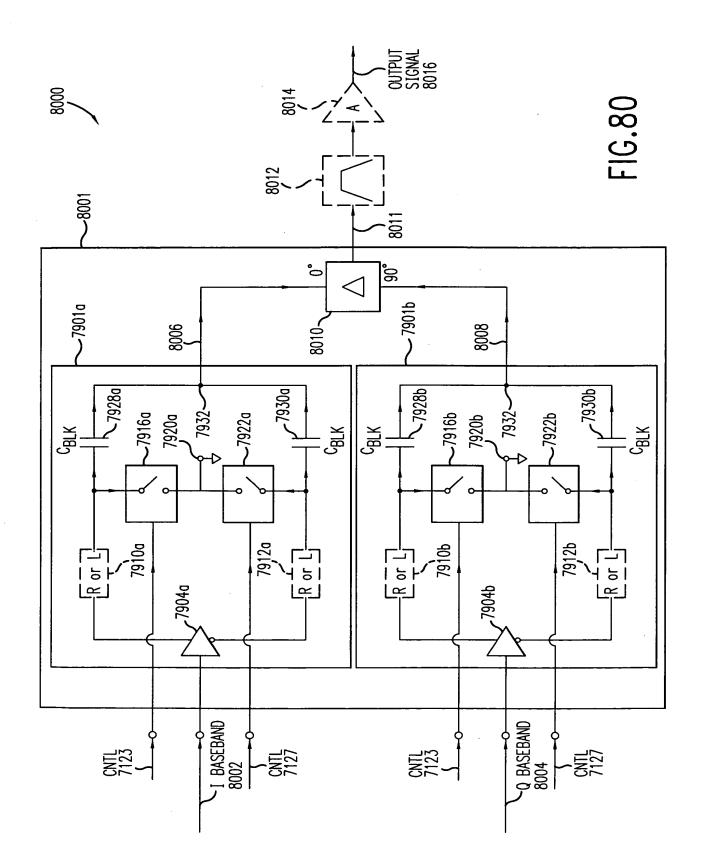
Appl. No. 09/632,856; Filed: Aug 4, 2000

Dkt No. 1744.0630003; Group Unit: 2634

Inventors: Sorrells et al.

Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using
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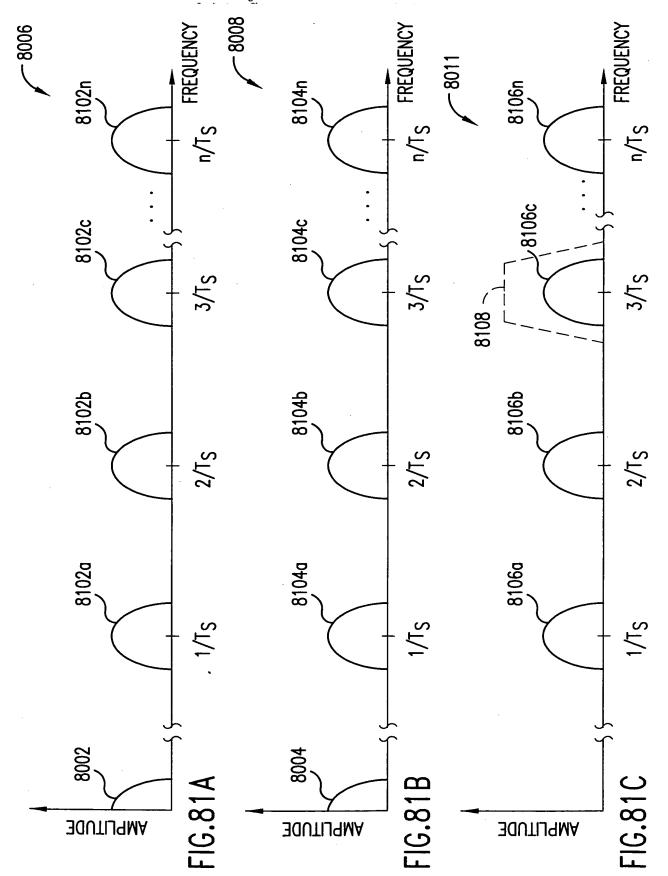
Appl. No. 09/632,856; Filed: Aug 4, 2000

Dkt No. 1744.0630003; Group Unit: 2634

Inventors: Sorrells et al.

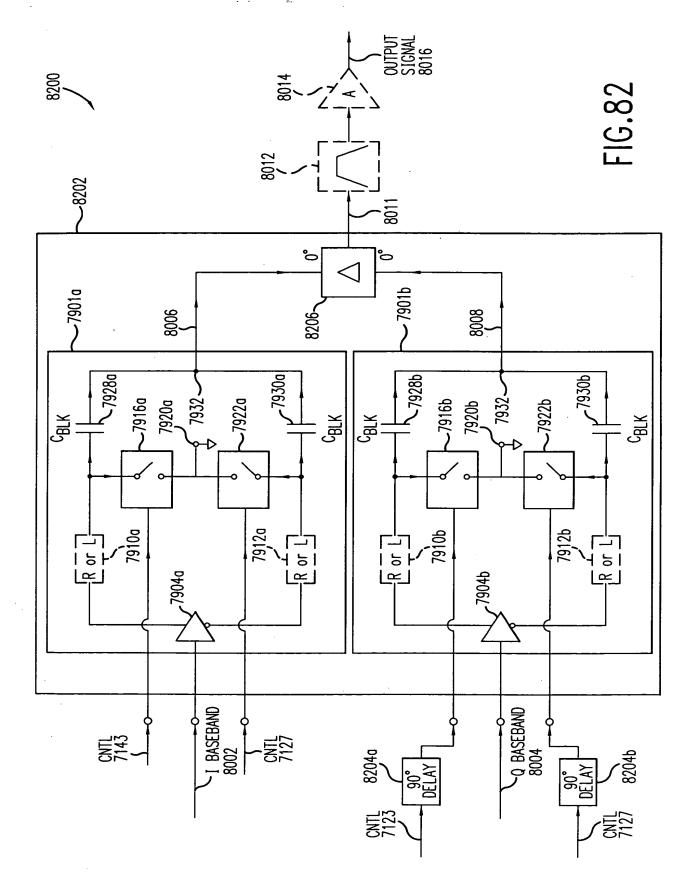
Tel. No.: 202-371-2600

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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



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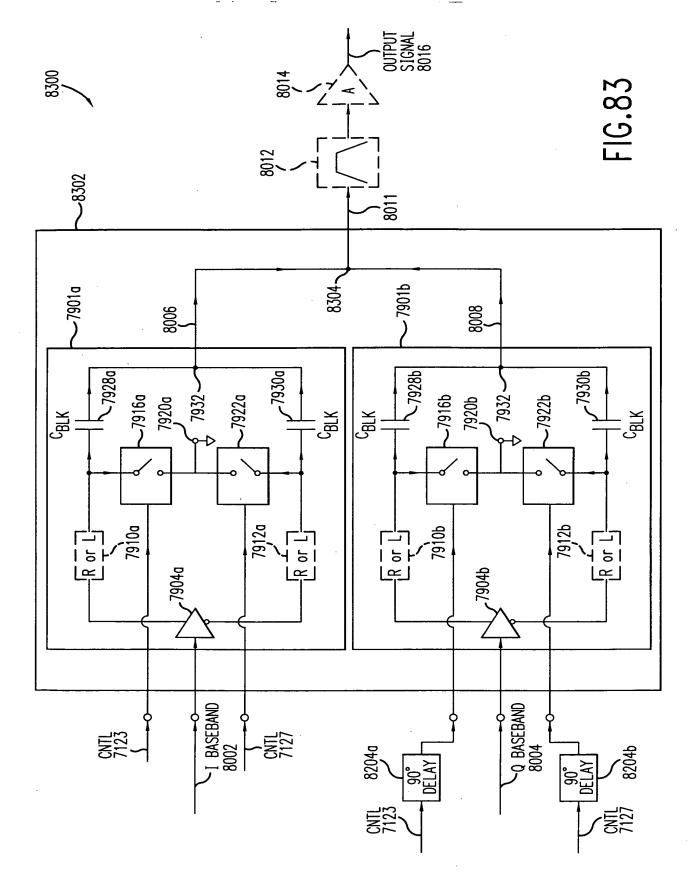
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

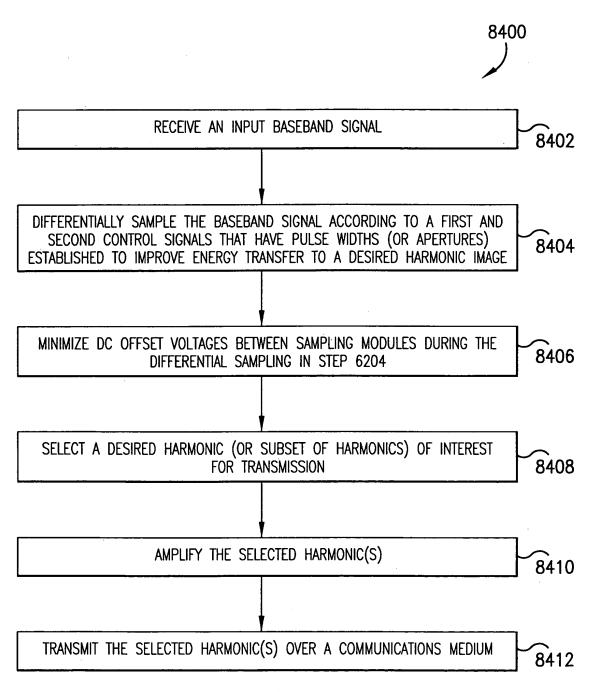


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Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al.

Inventors: Sorrells et al. Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



**FIG.84** 

Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit 8500 RECEIVE AN INPUT BASEBAND SIGNAL 8402 CONVERT THE (SINGLE-ENDED) INPUT BASEBAND SIGNAL INTO A DIFFERENTIAL SIGNAL HAVING FIRST AND SECOND SIGNAL COMPONENTS, WHERE THE 8502 SECOND COMPONENT IS AN INVERTED VERSION OF THE FIRST COMPONENT ADD A DC REFERENCE VOLTAGE TO BOTH OF THE DIFFERENTIAL SIGNAL COMPONENTS, RESULTING IN A FIRST COMBINED SIGNAL AND SECOND 8504 COMBINED SIGNAL GENERATE A FIRST CONTROL SIGNAL AND A SECOND CONTROL SIGNAL THAT HAVE A COMMON FREQUENCY BUT ARE PHASE-SHIFTED WITH RESPECT TO EACH OTHER, AND THAT HAVE PULSE WIDTHS (OR APERTURES) OF TA THAT ARE ESTABLISHED TO IMPROVE ENERGY TRANSFER TO A DESIRED HARMONIC OF THE CONTROL 8506 SIGNAL FREQUENCY 8404, 8406 SAMPLE THE FIRST COMBINED SIGNAL ACCORDING TO THE FIRST CONTROL SIGNAL TO GENERATE A FIRST HARMONICALLY RICH SIGNAL 8508 SAMPLE THE SECOND COMBINED SIGNAL ACCORDING TO THE SECOND CONTROL SIGNAL TO GENERATE A SECOND HARMONICALLY RICH SIGNAL 8510 COMBINE THE FIRST HARMONICALLY RICH SIGNAL AND THE SECOND HARMONICALLY RICH SIGNAL TO GENERATE A THIRD HARMONICALLY RICH SIGNAL THAT HAS MINIMAL CARRIER INSERTION IN THE HARMONIC IMAGES 8512 SELECT A DESIRED HARMONIC (OR SUBSET OF HARMONICS) 8408 FOR TRANSMISSION

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Inventors: Sorrells et al.

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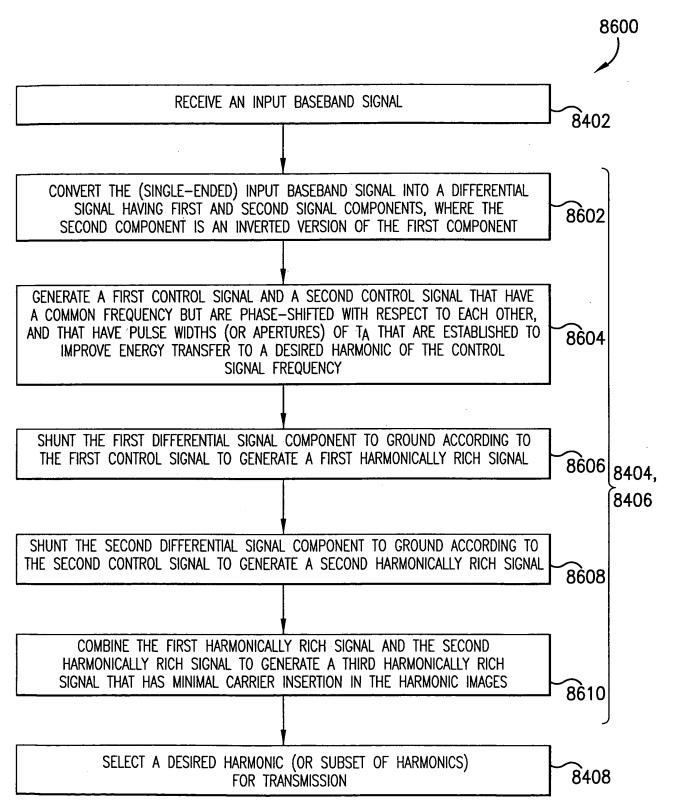
**FIG.85** 

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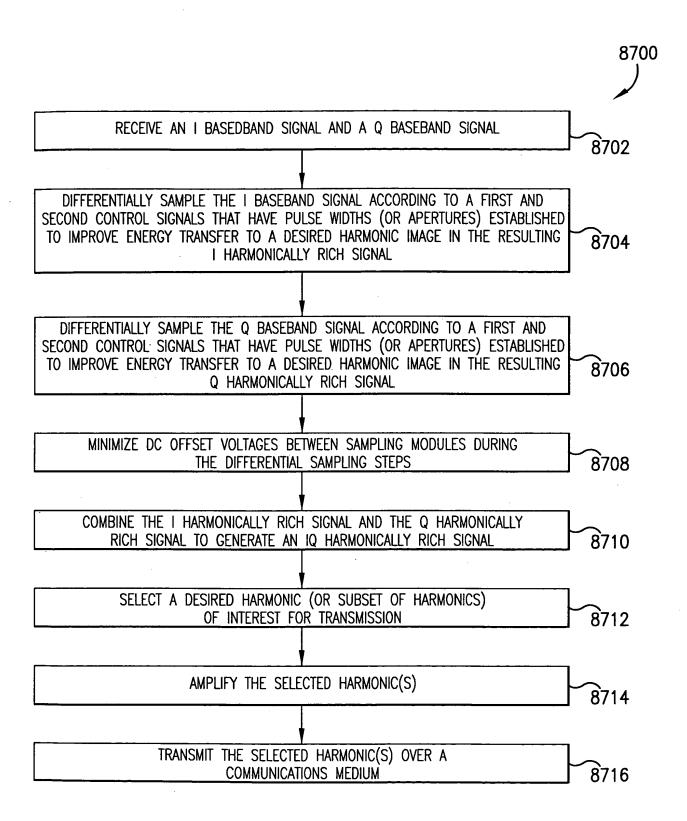
Inventors: Sorrells et al. Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



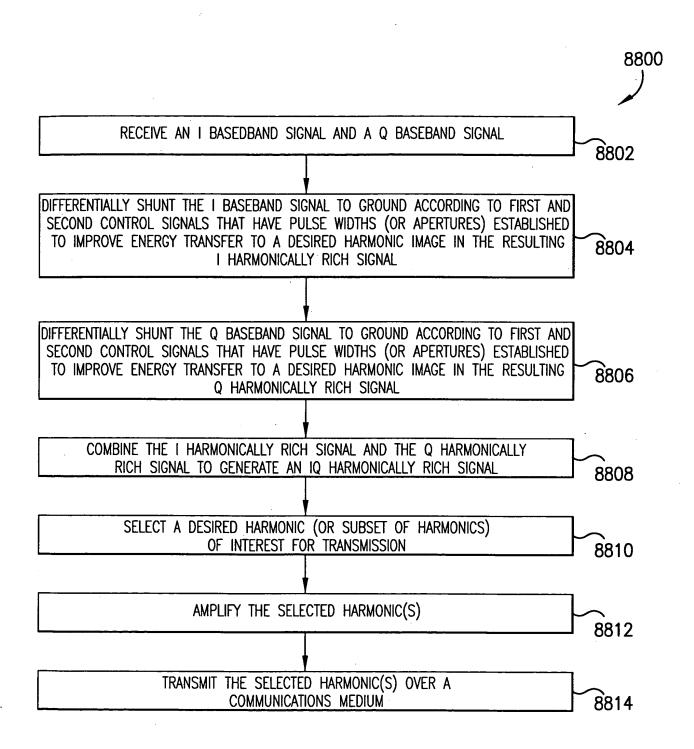
**FIG.86** 

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Inventors: Sorrells et al.
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Including Multi-Phase Embodiments and Circuit



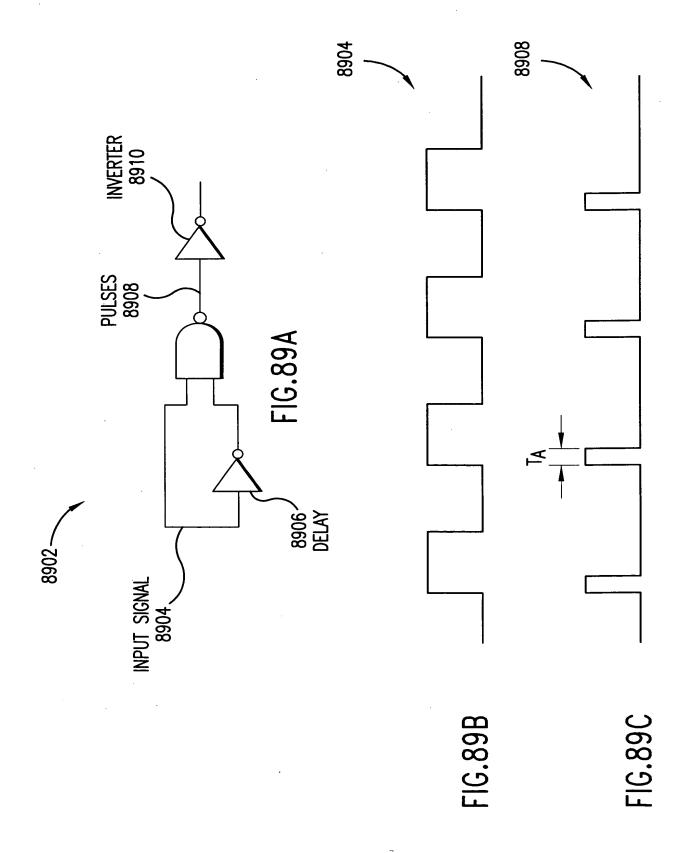
**FIG.87** 

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**FIG.88** 

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

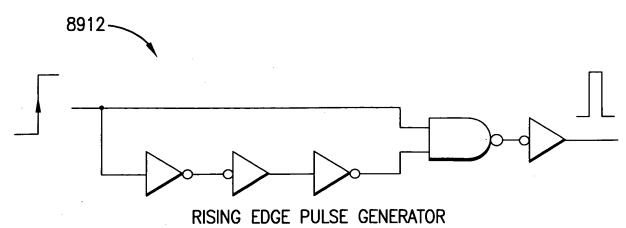


FIG.89D

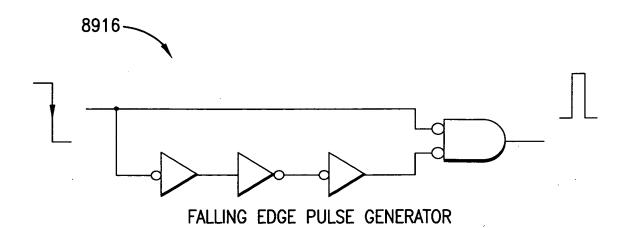
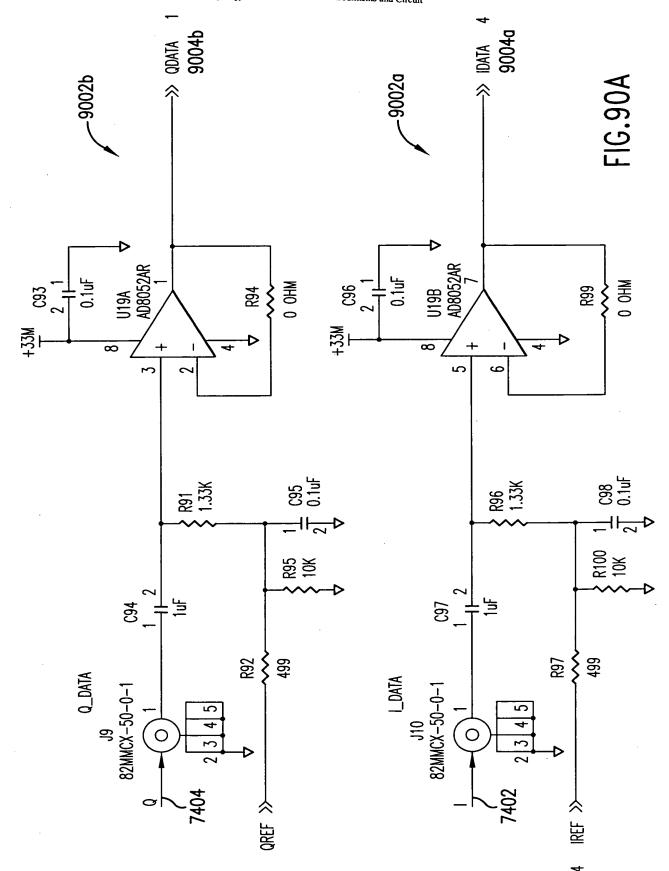


FIG.89E

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Appl. No. 09/632,856; Filed: Aug 4, 2000
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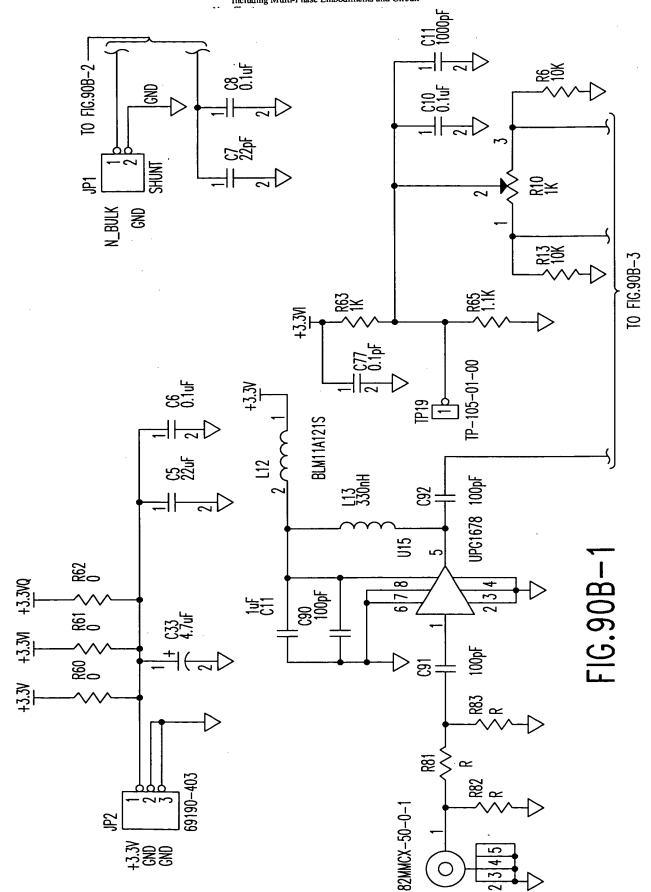
Dr. 1744-0530003; droup Unit: 2034
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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FIG.90B-2	FIG.90B-4
FIG.90B-1	FIG.90B-3

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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



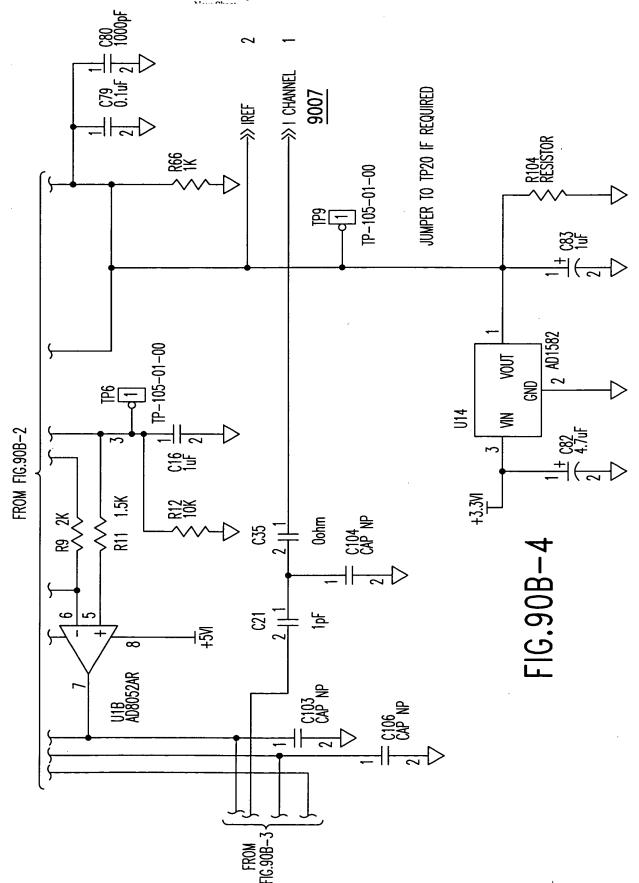
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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit FIG.90B-2 |\_DATA 9004a %¥ ¥ TO FIG.90B-4 88 1.33 \$¥£. \$ ₹ 0.1uF U1A AD8052AR R89 4.02K 77 5.04K

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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit TO FIG.908-4 020\_V11 FROM FIG.90B-1 0 884 TP-105-01-00 CAP NP 0001 器 U17 A0T21T C21 1000pF R71 RESISTOR ESC414 S 읮 INPUT TO TI 016 읮

FIG.90B-3

New Sneet
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Inventors: Sorrells et al.

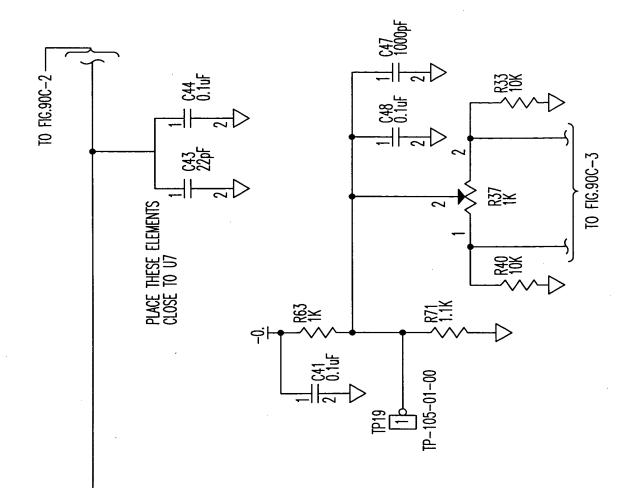
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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FIG.90C-2	FIG.90C-4
FIG.90C-1	FIG.90C-3

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FIG.90C-1

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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit FIG.90C-2 85 ¥ TO FIG.90C-4 R103 ⋛≍

 $\infty$ 

U1A AD8052AR

R102 4.02K

0.1uF

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Inventors: Sorrells et al.
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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

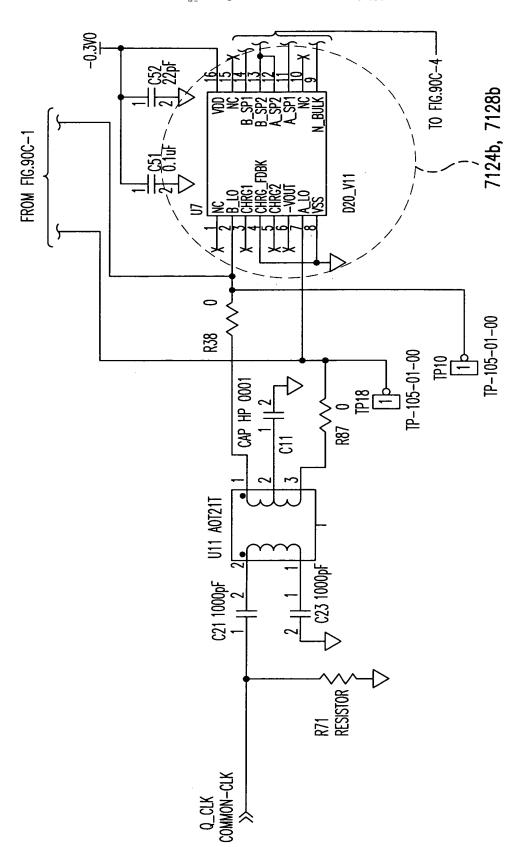


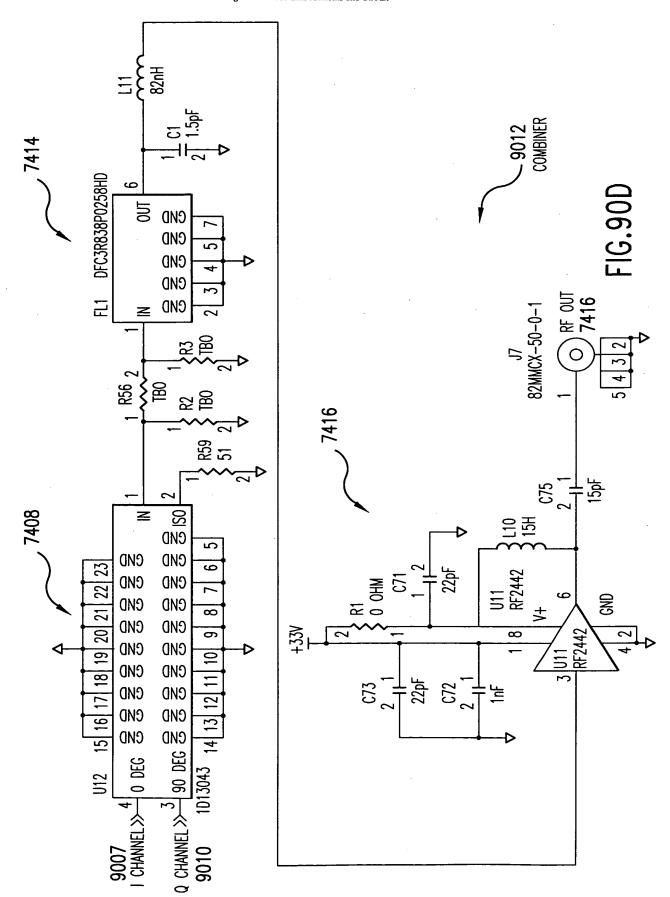
FIG.90C-3

Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit 1 685 1 687 2 0.1 1 2 1000 F → 0 CHANNEL 9010 JUMPER TO TP20 IF REQUIRED R72 1X IP-105-01-00 VOUT 8 ₹ FROM FIG.90C-2 82∓ 窓気 <del>,</del> 5. ∺ R38 R36 FIG.90C-4 Q CHANNEL 9008 횬 စ C21

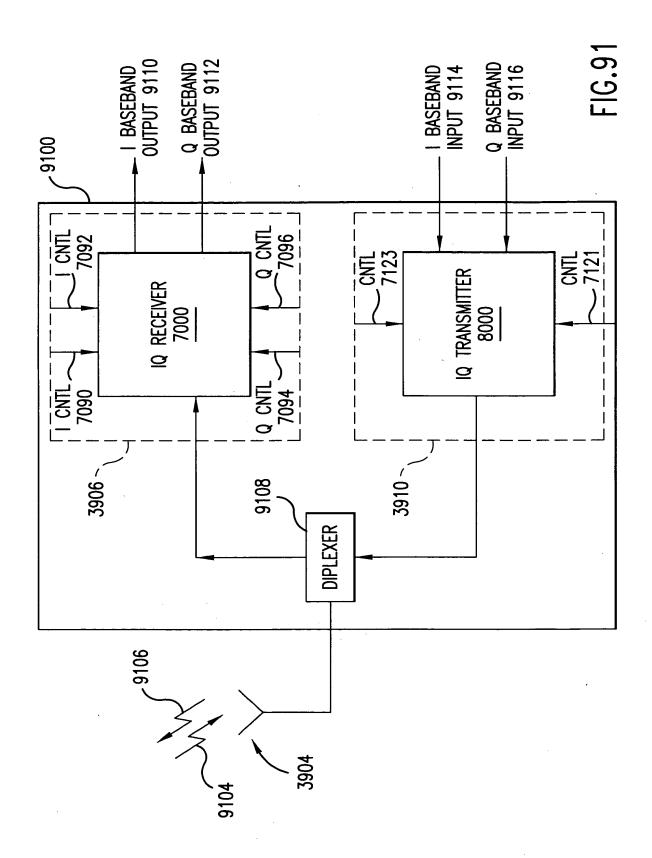
New Sheet Sheet 182 of 349 Replacement Sheet Sheet 183 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600

Trel. No.: 202-371-2600

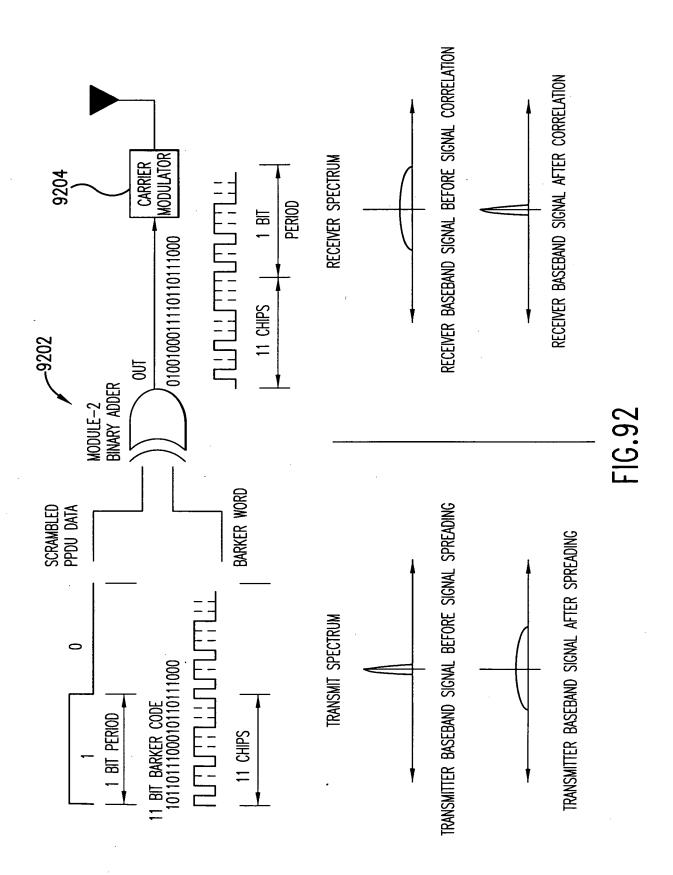
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



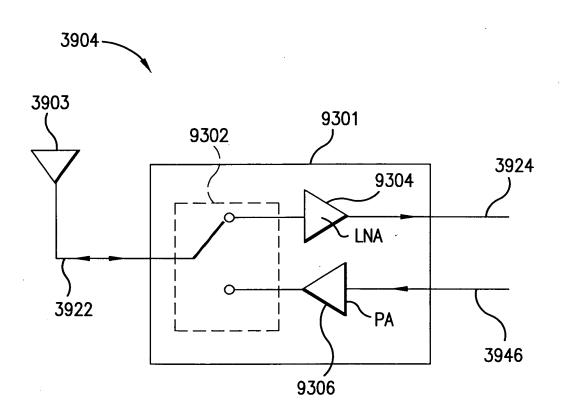
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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



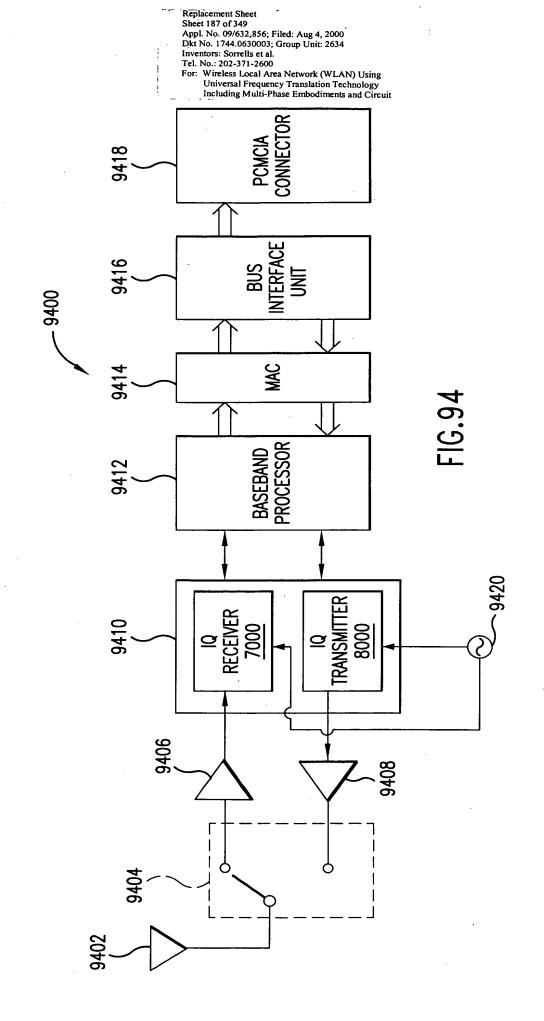
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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
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**FIG.93** 



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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit 99999999999 ρp FIG.95A  $\neg$  $\neg$ 

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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

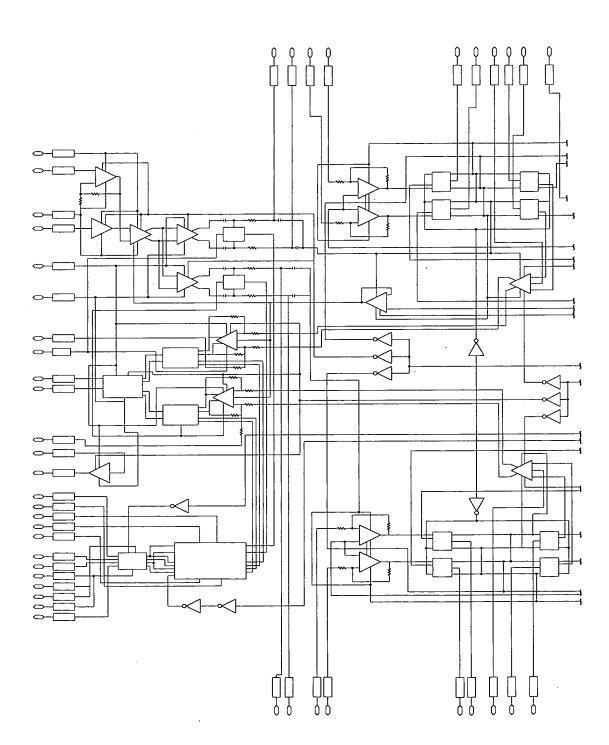


FIG.95B

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Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

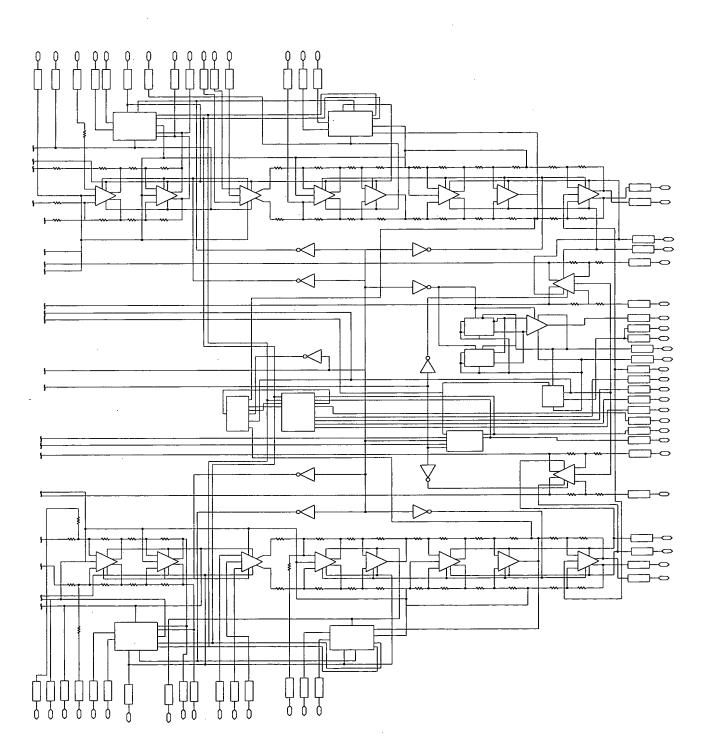
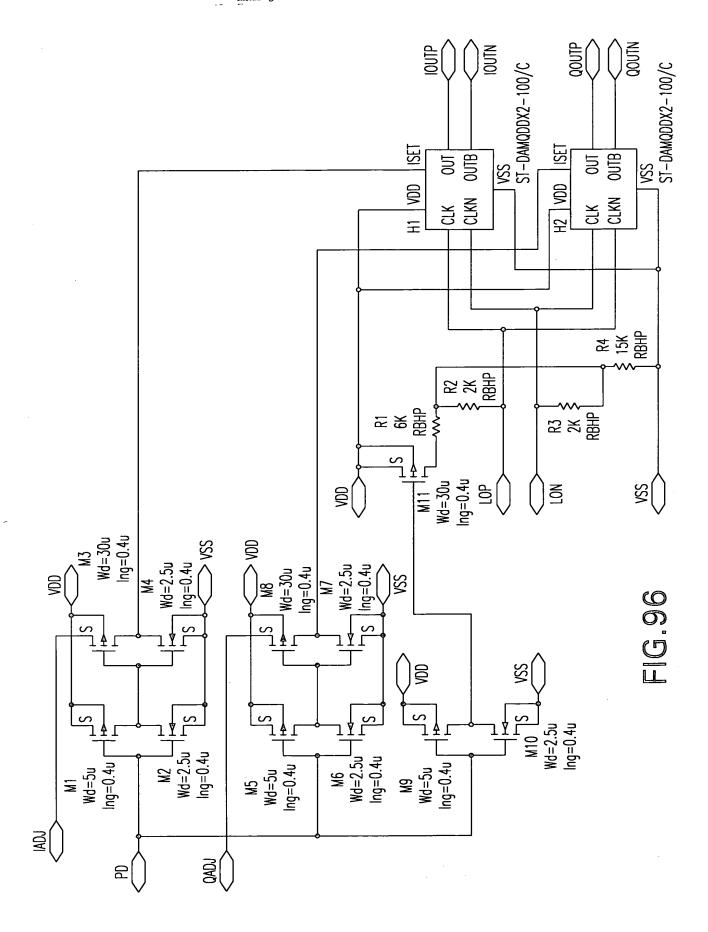


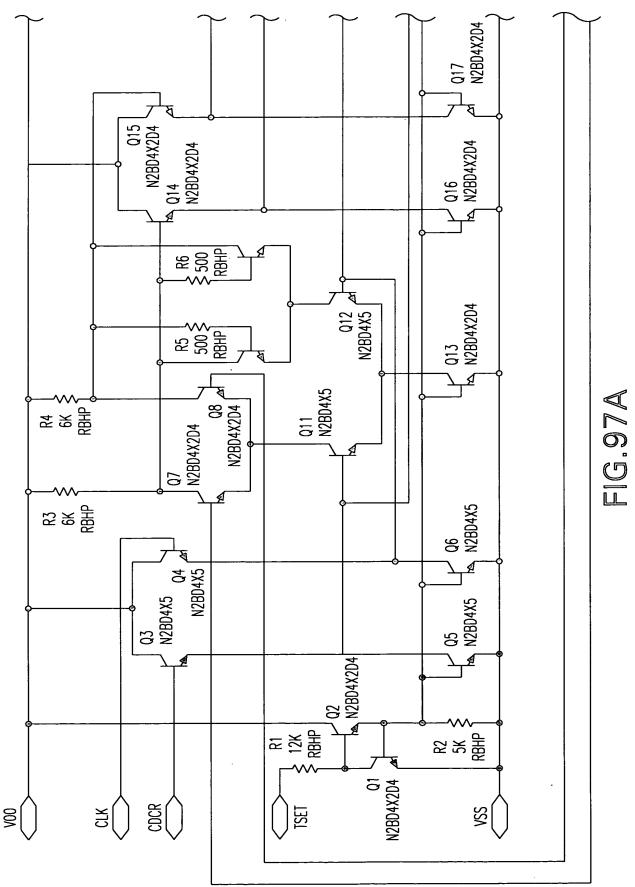
FIG.95C

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Inventors: Sorrells et al.
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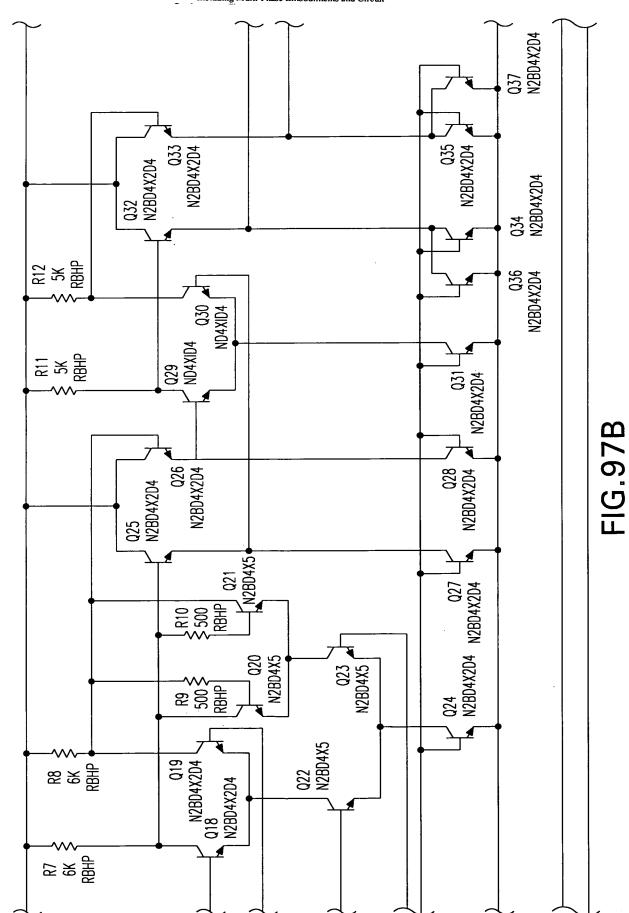


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Inventors: Sorrells et al.
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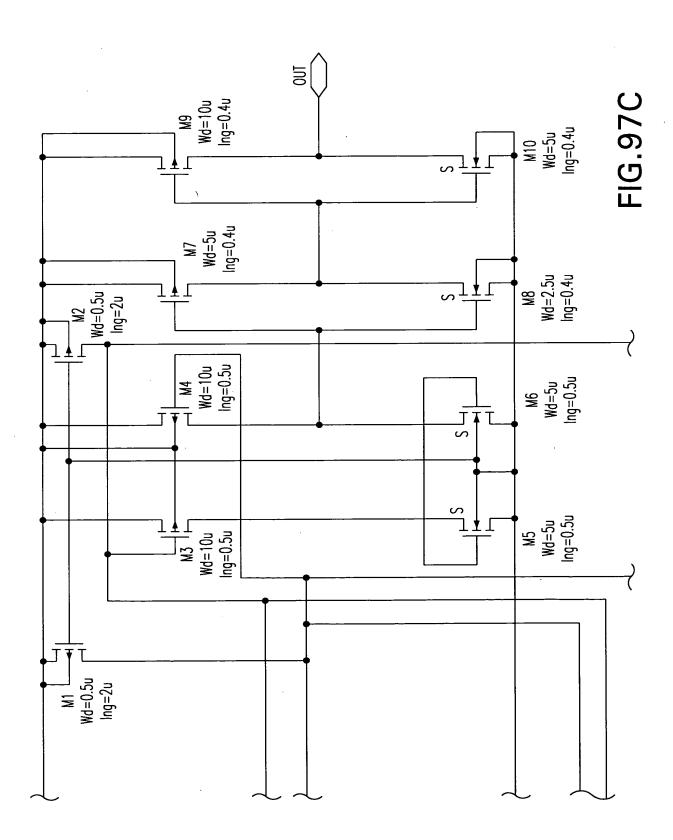
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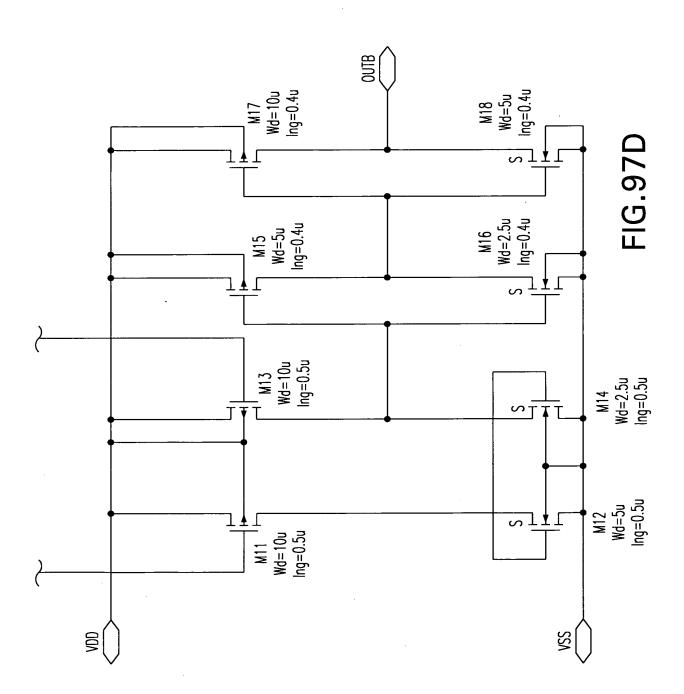


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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using

Or: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



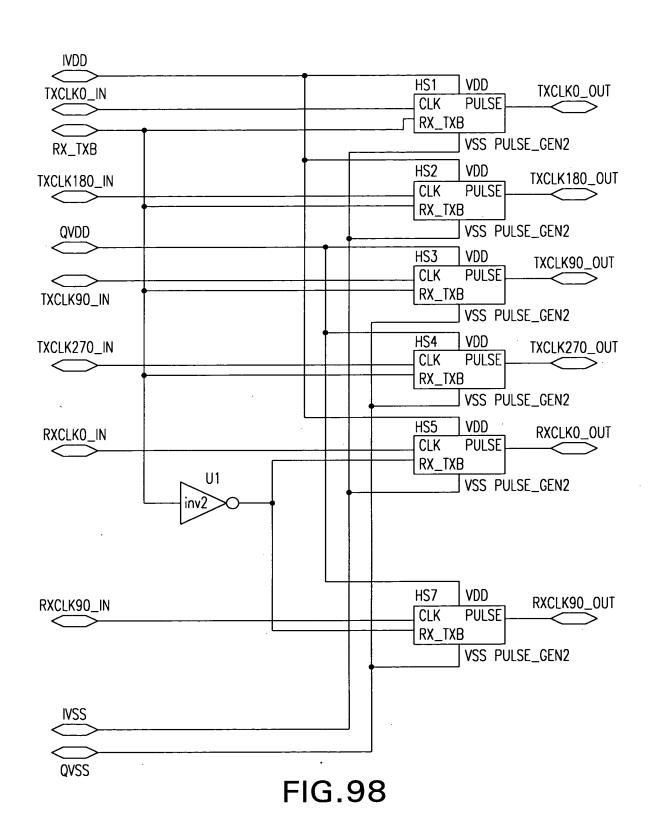
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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
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Including Multi-Phase Embodiments and Circuit



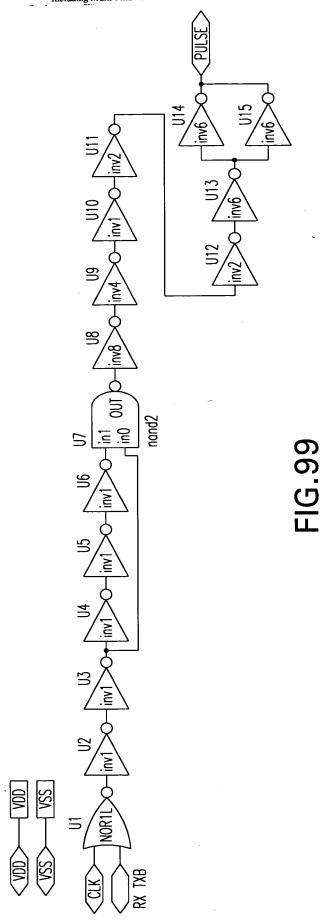
Replacement Sheet Sheet 196 of 349

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit REXP REXP R5 12 REXP 6.0mA 6.0mA N5E6B2CD4X20 5 조 꽃 쫎눆뼕 조 옷 服 0.901V 1.956V 25 82 Ing=0.4u Wd=40u M3 Ing=0.4u Wd=5u M4 FIG. 100 Ing=0.4u Wd=5u M1

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M2 — M2 — W4=2.5u — S — Ing=0.4u

Wd=100u Ing=0.4u

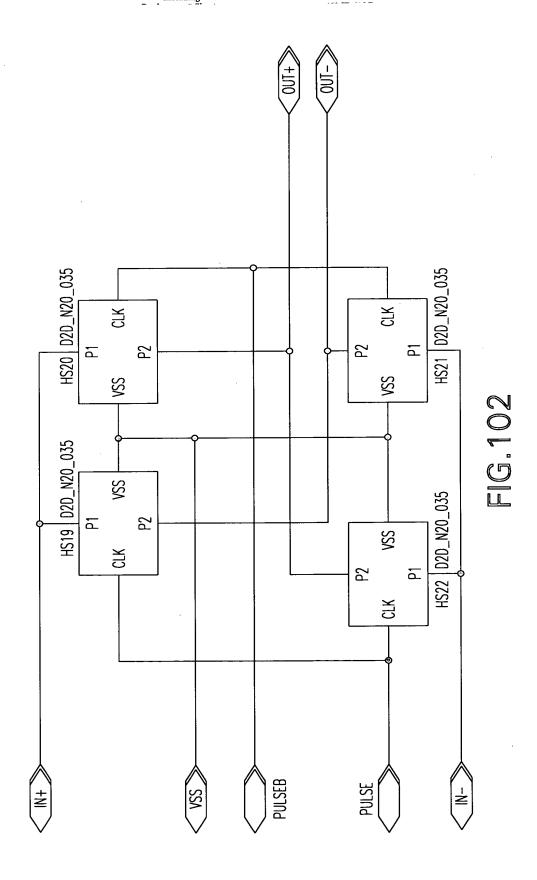
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 $\begin{array}{c} M1 \\ Wd = 5u \\ Ing = 0.4u \\ \hline \end{array}$ 

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit RBHP RBHP 6.1mA 6.1mA 25 옷 쫎눚쯃 조 × 류 2.303V 0.965V 25 gG Ing=0.3u Wd=40u M3 Ing=0.4u Wd=5u M4 FIG. 103 Ing=0.4u Wd=5u M1

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For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

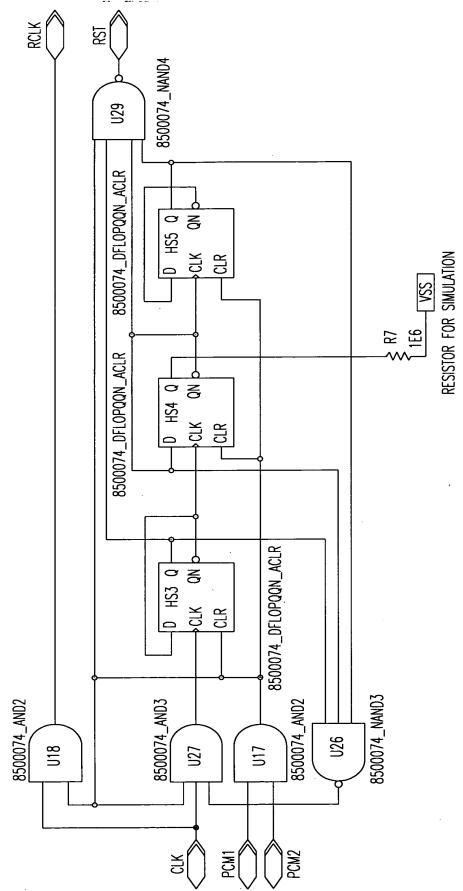
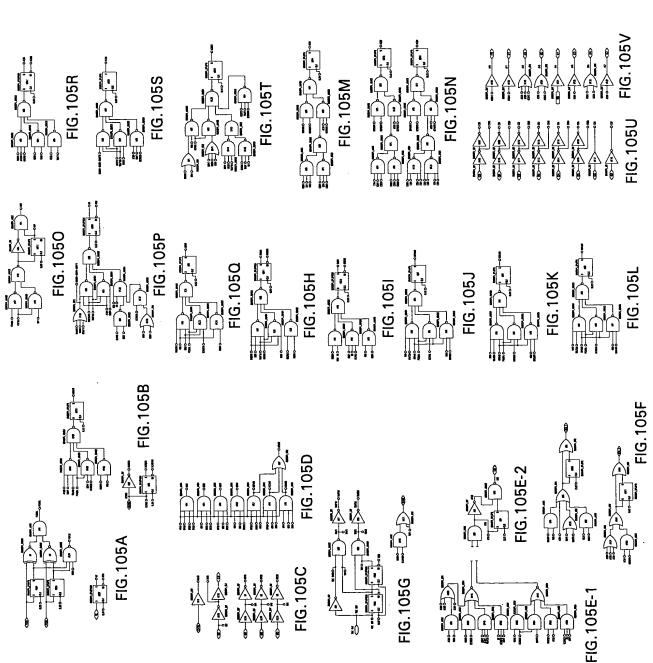
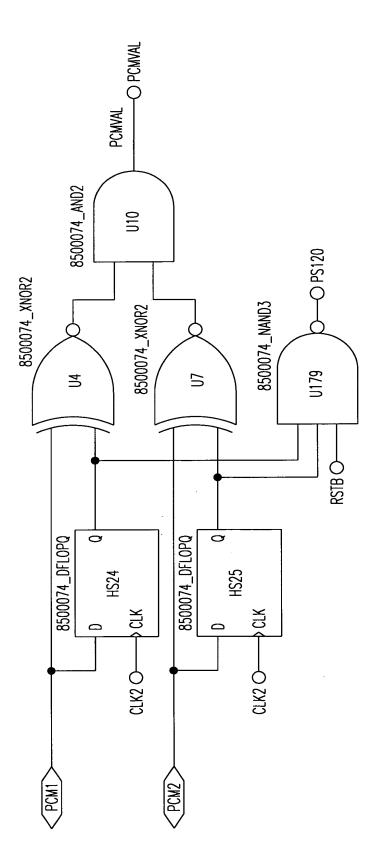


FIG. 104



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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



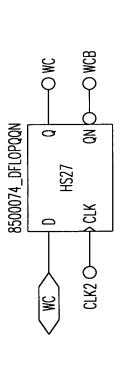
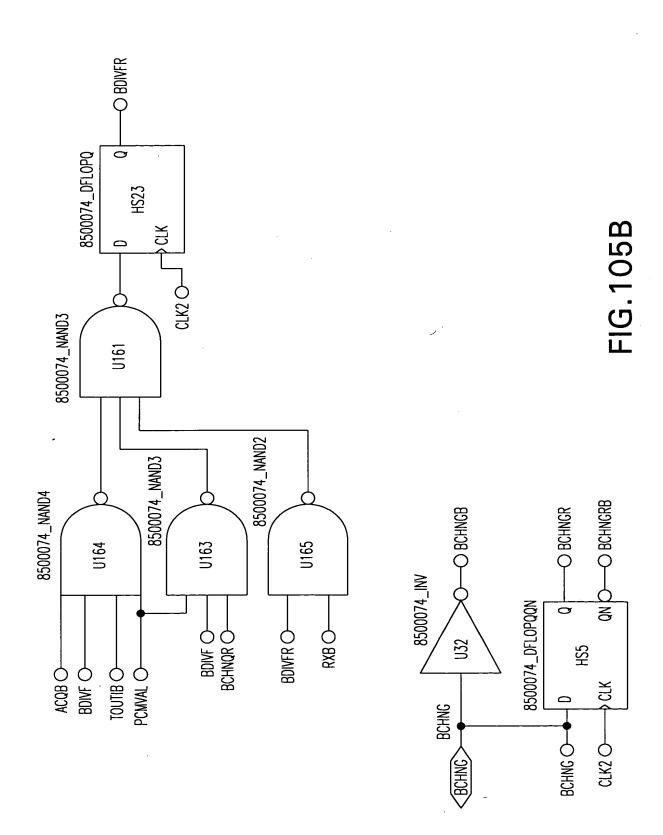
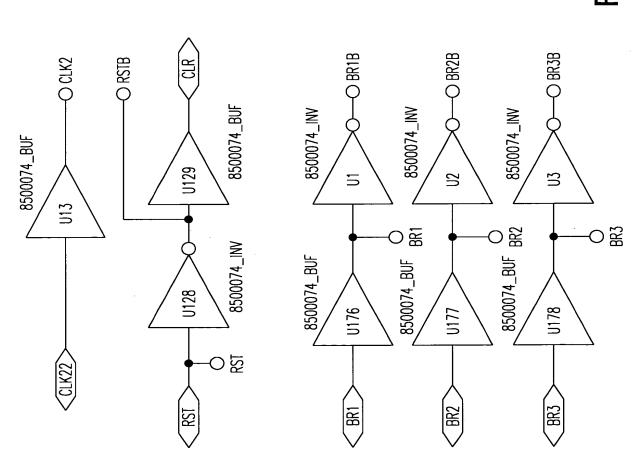


FIG. 105A

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Dkt No. 1744,0630003; Group Unit: 2634
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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

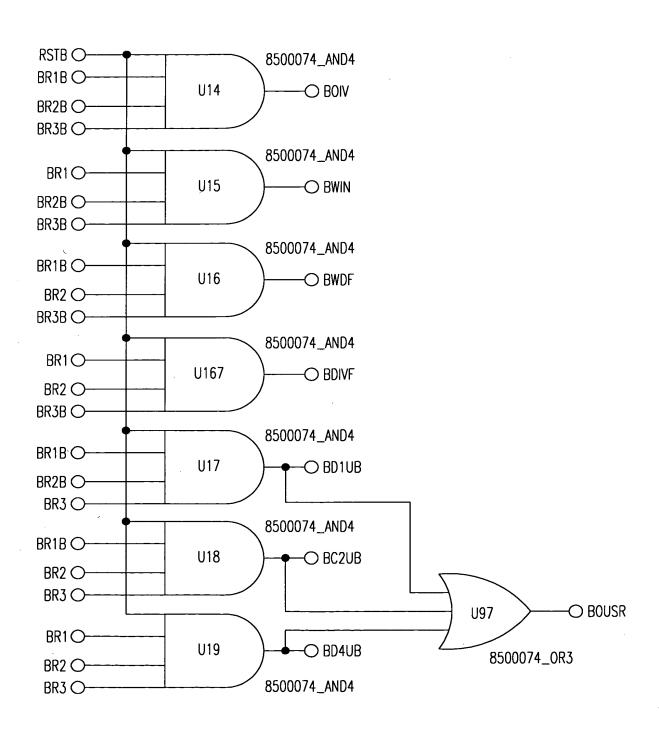


FIG. 105D

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Inventors: Sorrells et al.

Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

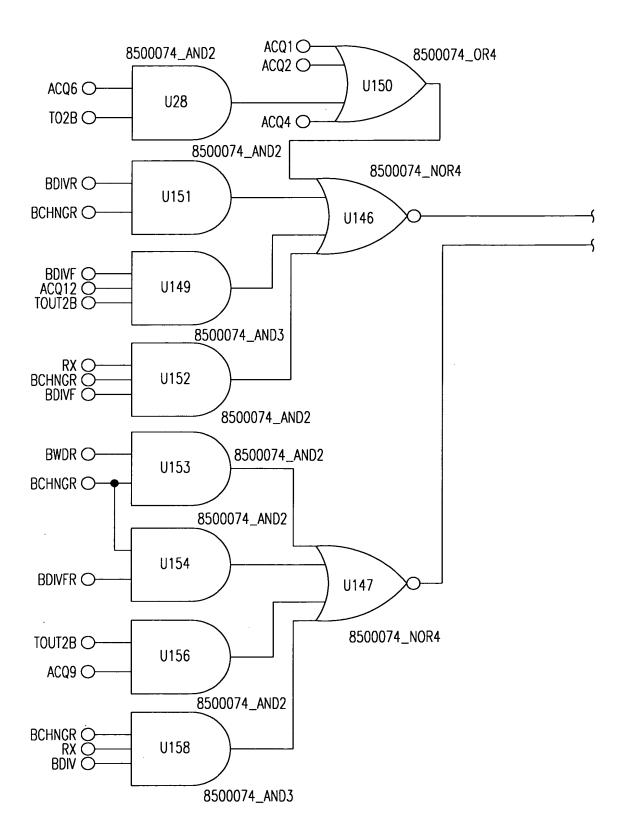


FIG.105E-1

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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

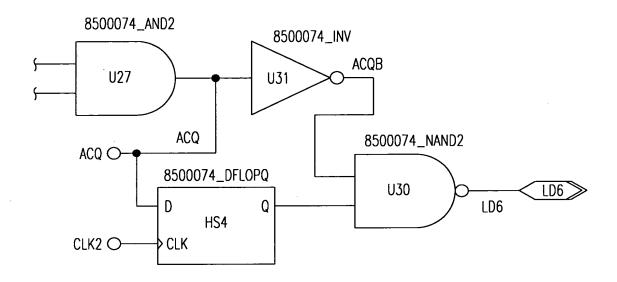


FIG.105E-2

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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit 8500074\_0R2 **192** FIG.105F 8500074\_DFL0PQ 8500074\_0R2 HS26 1101 S.K 8500074\_0R4 CLK2 O 8500074\_DFLOPQ HS21 960 갽 8500074\_AND2 8500074\_0R2 CLK2 Q 8500074\_0R2 8500074\_AND2 **U102** 192 99 **U172** 8500074\_0R3 BOUBR O-WCB  $\bigcirc$ RXBO BWDR 🔿 ACQ4 () BDIVRO BDIVFR O 8500074\_AND2 **U134 U103** 

ACQ1 Q

ACQ4 O

BWINRB 🔿

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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit T0UT2B 8500074\_INV **U20** 10011 **TOUT2 TOUT2** 8500074\_NAND2

**U23** 

102 Q

8500074\_DFLOPQQN

8500074\_DFLOPQQN

TIME OUT

TIME OUT

8

沃

중

Ю

CLK2 O-

HS24

HS22

T0UT1B

**U21** 

100T

**U22** 

95

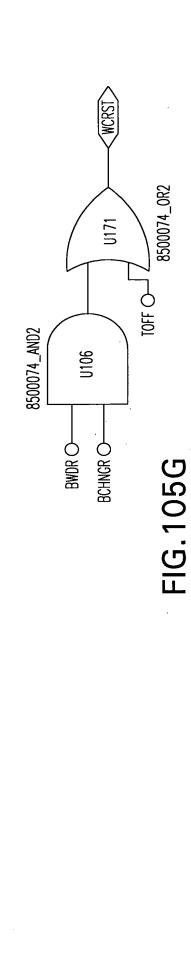
8500074\_INV

8500074\_NAND2

TIME OUTBO-

8500074\_INV

**U24** 



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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

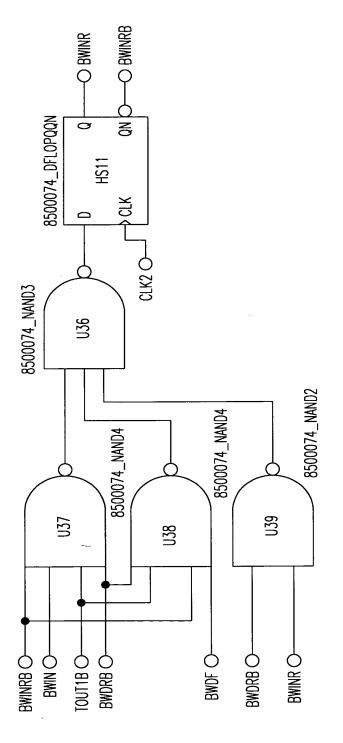


FIG. 105H

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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

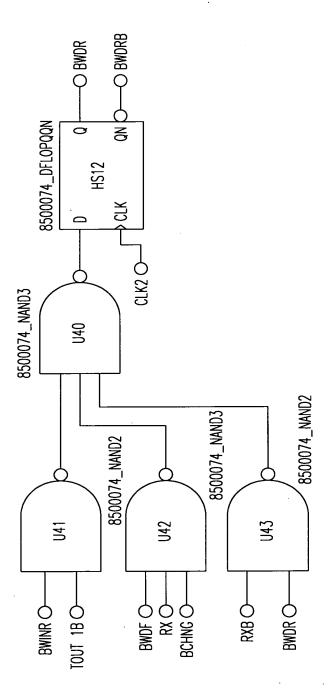


FIG. 1051

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Inventors: Sorrells et al.
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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

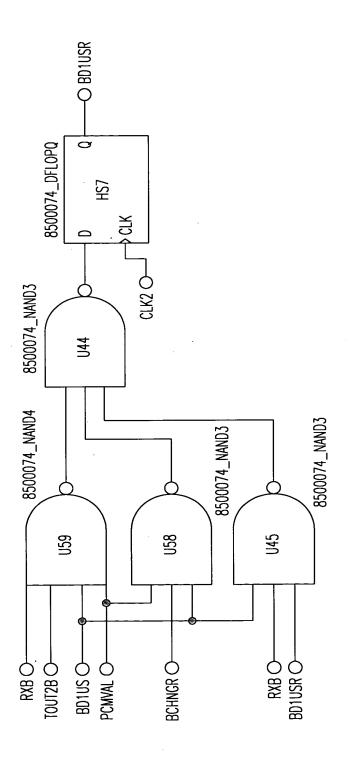


FIG. 105J

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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

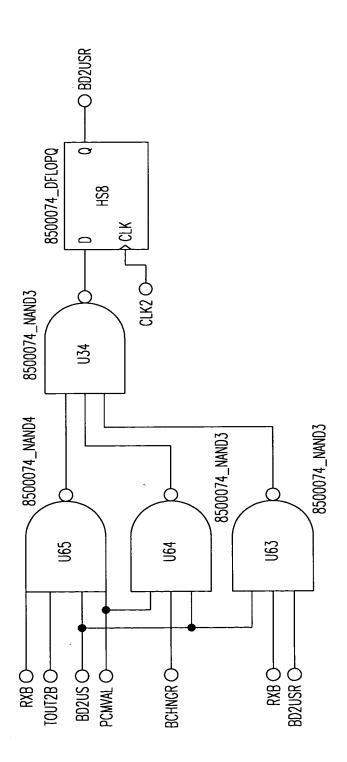


FIG: 105K

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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

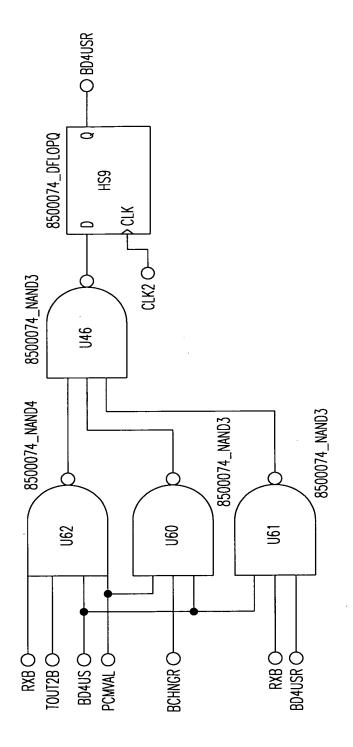


FIG.105L

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Inventors: Sorrells et al.
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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

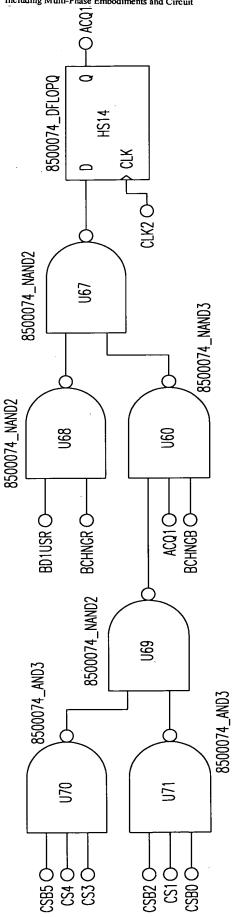


FIG.105M

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit 0 HO ACQ2 8500074\_DFL0PQ 8500074\_DFL0PQ HS16 HS15 Ю CK 8500074\_NAND2 8500074\_NAND2 **U72** 177 8500074\_NAND3 8500074\_NAND3 FIG. 105N 8500074\_NAND2 8500074\_NAND2 **U133** U73 078 8 ACO4 O-BCHNGB O-ACQ2 O-BCHNGB O-BD4USR O-BD2USR O BCHNGR O BCHNGR O 8500074\_NAND2 8500074\_NAND2 079 **U74** 8500074\_AND3 8500074\_AND4 8500074\_AND3 8500074\_AND4 **U132 U131** 9/0 **U75** CSB1O-\$\$ \$\triangle \triangle \t CS3 Q CS2 Q CSB3 O CSB2 O CSB7 Q S6 O

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

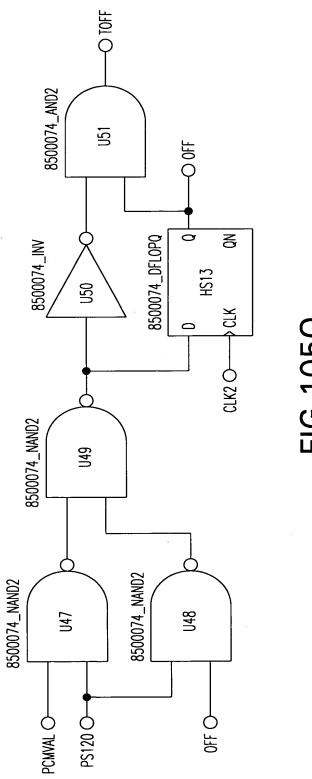
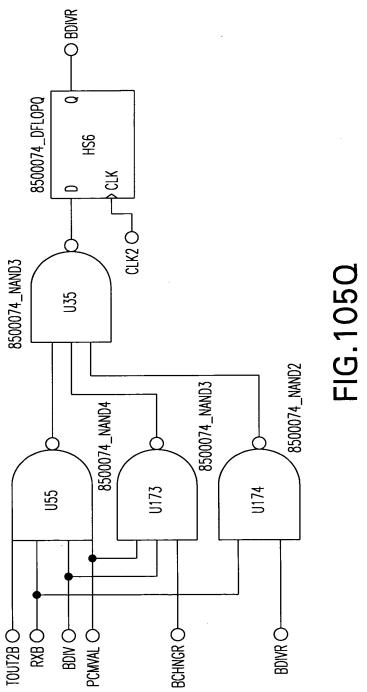


FIG.1050

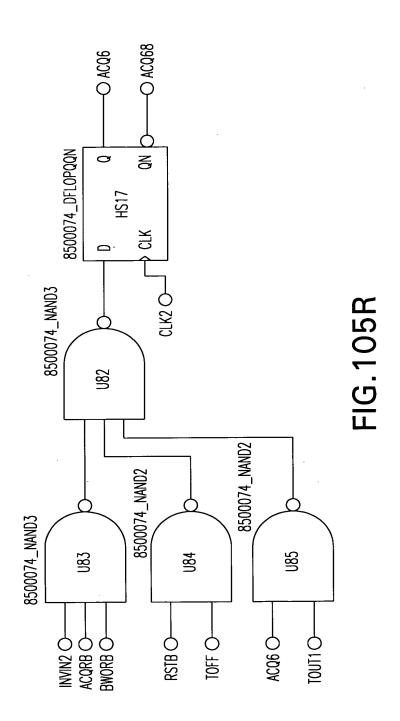
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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit O RXB **₩** 8500074\_DFLOPQQN HS10 CK CLK2 O 8500074\_NAND3 FIG.105P **U33** O BOUSR-BDIVR-BDIVFR 8500074\_NAND4 8500074\_NAND4 8500074\_NAND4 8500074\_NAND2 **U138** 990 **U53 U137** 8500074\_0R3 8500074\_0R2 AC09 O F BCHNGR O TOUT1B O TIMEOUTB () 8500074\_NAND2 **U138 U54** U140 BDUSR Q BDINFR Q BDIVF O BCHNC O 

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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

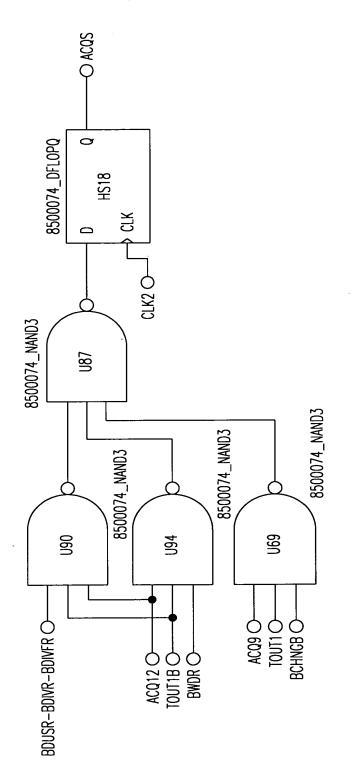
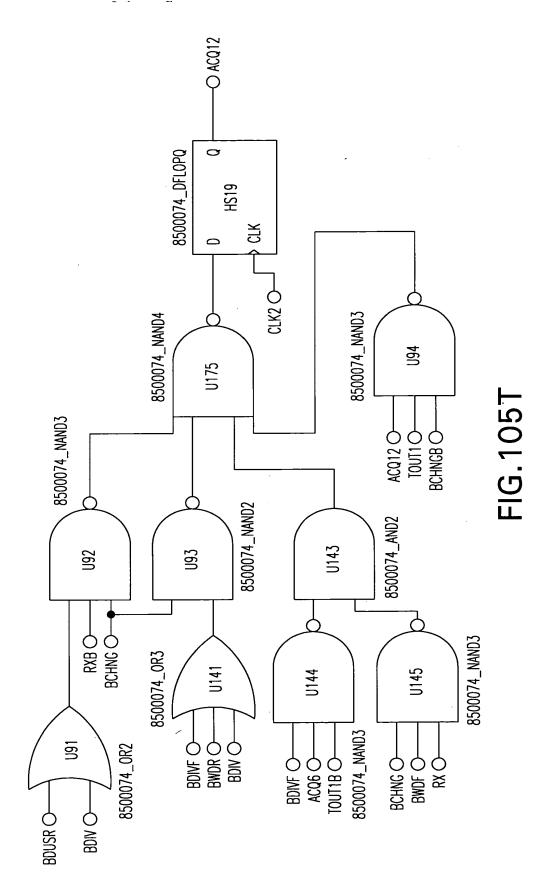


FIG. 105S

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Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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Inventors: Sorrells et al. Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

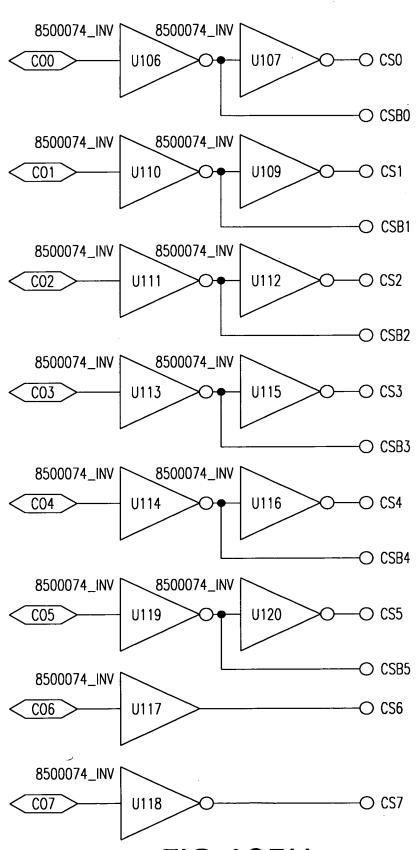


FIG. 105U

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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

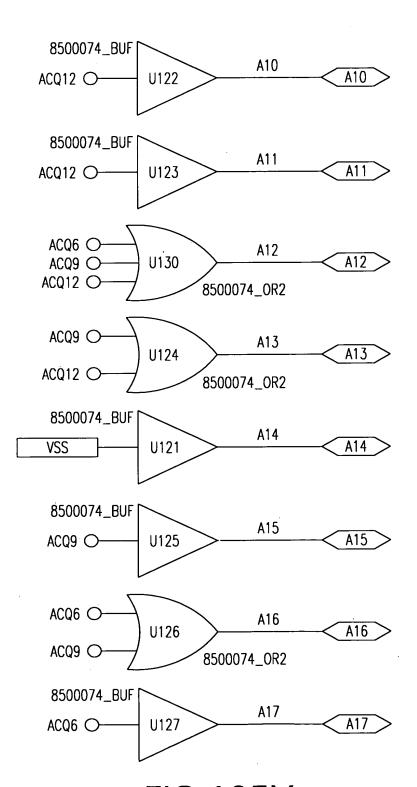
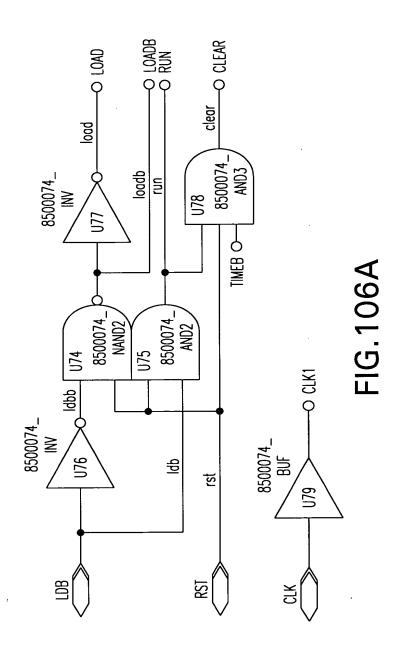


FIG.105V

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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



Inventors: Sorrells et al.

Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit 8 8 88 B Ą 8500074\_DFLOPQQN 8500074\_DFLOPQQN 8 중 HS4 HS3 汉 끐 Ŷ ⋛ 수울 8500074 8500074 NAND3, NAND3 U38 **U37** FIG. 106B 8500074 8500074\_ 8500074 8500074 8500074 NAND2 NAND4 NAND4 NAND4 **U34 U33 U31** A C LOADB O B O-1 <u>₩</u> Res 9 FERS 9 LEAR 9 CER 9 LOAD O SEAR P 10AD Q 8500074\_ NAND4\_ 8500074 NAND3, **U21** 8500074\_ 8500074\_ 8500074\_ NAND3\_ 8500074 8500074 8500074 NAND3 NAND3 NAND3 NAND3 NAND3 NAND2 8 9 ბბბ ოფი Q Q Q Q Q Ó Q Ó 888 യയ සු ව 8 Φ

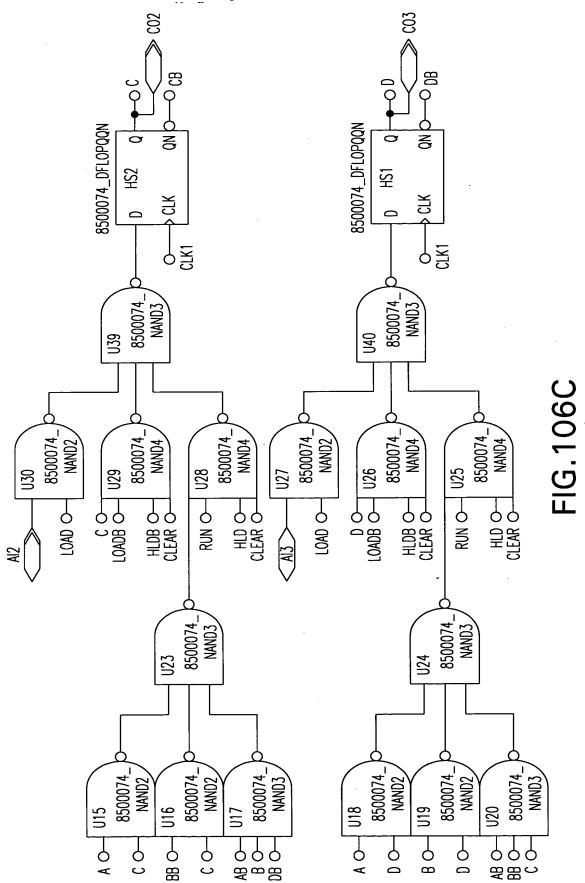
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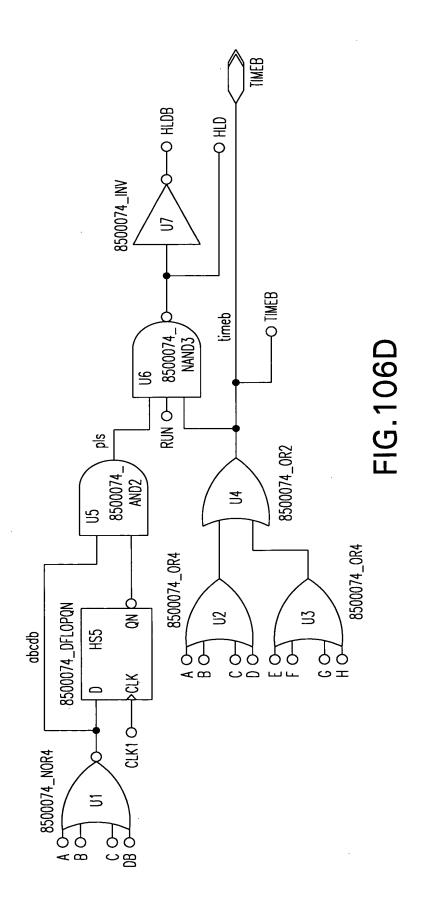
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Inventors: Sorrells et al. Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



Inventors: Sorrells et al. Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit . 205 02 8 8500074\_DFLOPQQN 8500074\_DFLOPQQN 8 28 HS9 뜴 Ю 수울 8500074 8500074 NAND3, NAND3 171 FIG. 106E 8500074 8500074 8500074 8500074 8500074\_ 8500074 NAND4 NAND2 NAND4 NAND2 NAND4 NAND4 990 690 **068 U65 U64** 190 RS O Res O E 9-FER 9 FER 9 CEAR 9 [SB 9 CEAR 9 10AD Q 8500074\_ NAND4\_ 8500074 NAND3 **U**55 **U54** 8500074\_ NAND3\_ 8500074\_ 8500074 8500074 8500074 8500074 8500074 NAND2 NAND3 NAND3 NAND3 NAND3 NAND3 **U45 U46 U43 U44 U47 U41** 889 ひらら世帯里 Q Q う う う う う う Q Q Ò 8 4 4 4 Ò Q Ó Ò Ò ლo∓ шOН \_

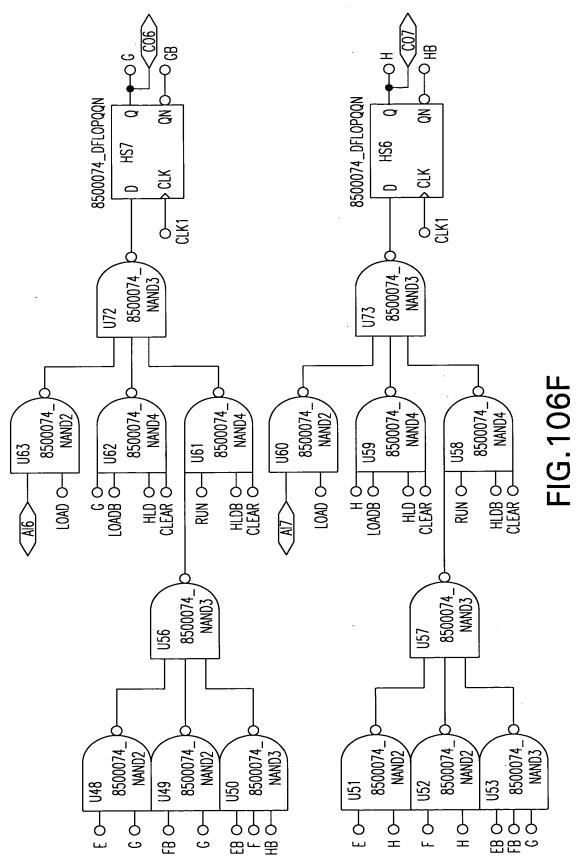
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Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600

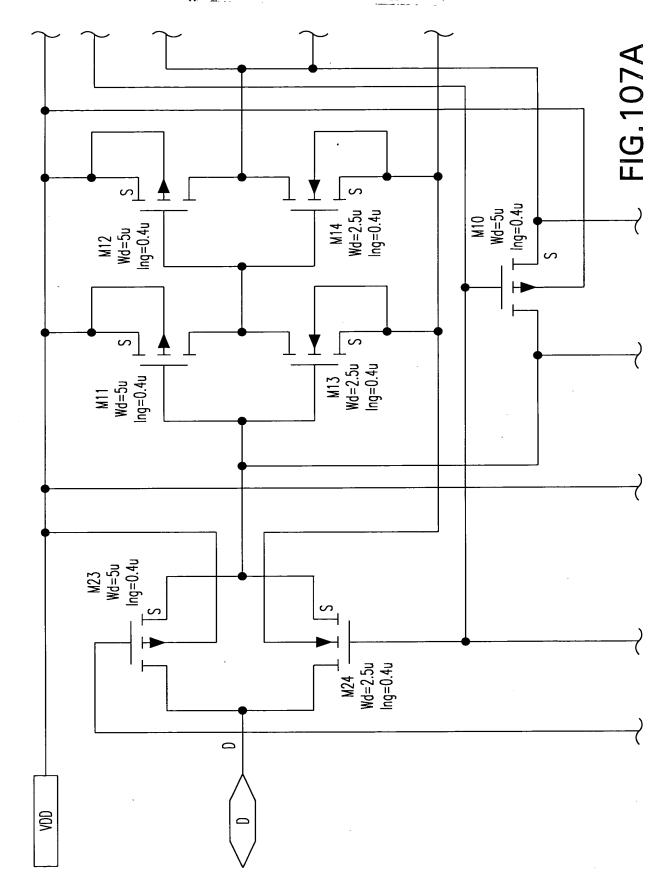
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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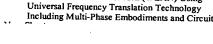
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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit M1 | Wd=10u Ing=0.4u M2 Wd=20u Ing=0.4u FIG.107B Wd=2.5u Ing=0.4u M15 Wd=5u Ing=0.4u M27 Wd=5u Ing=0.4u M20 <sup>1</sup> F Wd=2.5u Ing=0.4u M19 Wd=5u Ing=0.4u M21 Wd=5u Ing=0.4u -- M22 -- Wd=2.5u Ing=0.4u

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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit L M8 Wd=2.5u Ing=0.4u FIG.107C M7 Wd=2.5u Ing=0.4u M9 Wd=5u Ing=0.4u S M6 Wd=2.5u Ing=0.4u M5 Wd=5u Ing=0.4u 띥

VSS

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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit CHNG CHNG 8500074\_AND3 **U52** 8500074\_DFLOPQ HS12 응 8500074\_NOR2 8500074\_INV **U54** STB 990 NOR1 AND1 8500074\_XNOR2 8500074\_XNOR2 8500074\_AND3 057 **U46** 049 090 8500074\_NOR3 8500074\_DFL0PQ 0 8500074\_INV S

FIG. 108

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Including Multi-Phase Embodiments and Circuit

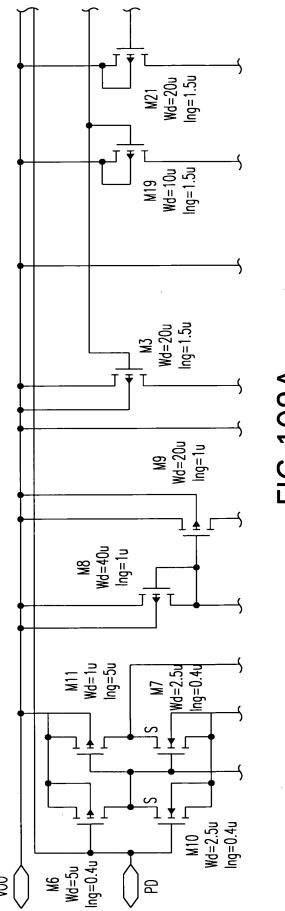


FIG. 109A

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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

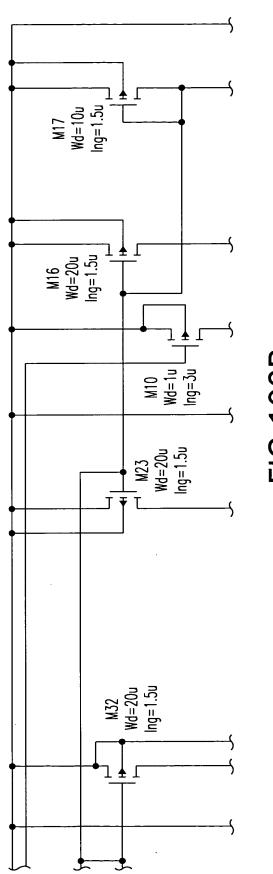


FIG. 109B

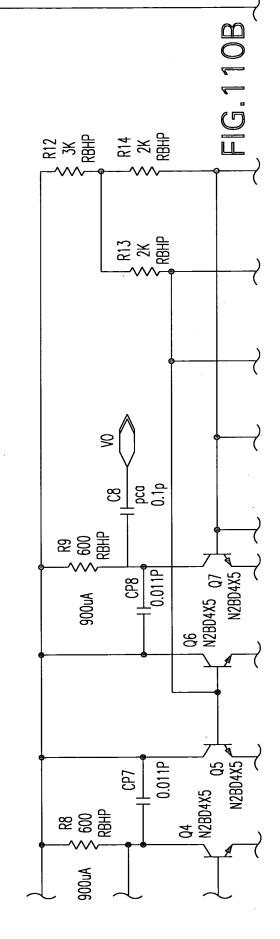
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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit M24 Wd=48u Ing=1u <u>∿</u>1 † [∾ l∳Γ M22 Wd=120u Ing=1u M26 Wd=32u Ing=1.5u  $\sim$ I M20 Wd=3u Ing=1u M14 Wd=4u Ing=1u  $\sim$ M2 Wd=96u Ing=1.5u M5 Wd=10u Ing=1.5u FIG. 109C M1 Wd=96u Ing=1.5u M4 Wd=10u Ing=1.5u <u>1 ‡ ſ</u> ı ∤ ∟ M12 Wd=10u Ing=1u Wd=10u Ing=1u ₩.

FIG. 109D

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Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit M11 Wd=5u Ing=0.4u 조 末 쨹 750uA M5 Wd=200u Ing=0.4u R20 12X RBHP M3 Wd=40u Ing=0.4u S Wd=5u Ing=0.4u FIG.110A M1 Wd=5u Ing=0.4u J<sub>Ť</sub>t M2 | Wd=2.5u Ing=0.4u ΛĒΕ 윤

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600

1el. No.: 202-3/1-2000
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



New Sheet Sheet 244 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit C4 C4 0.25p ₹2 ₩ ₩ 8 关 쫄 Š C9 C9 C.5p RBHP R4 02 <sup>L</sup> N2BD4X5 0.0275P CP4 C3 pca 0.25p C6 F pca 0.035p Q1 N2BD4X5 FIG.110C 중 눚 醬 750uA 25 6年 8年 C5 pca 0.25p CP5 0.0275P PARASITIC ONLY NOT FOR LAYOUT ALL CP\_  $\leq$ 

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit RH 10 유표 N2BD4X5 010 **⋚**듗뾽 R18 M10 Wd=20u Ing=0.4u \$≈₽ \$ R17 N2BD4X5 9 R16 2K RBHP N2BD4X5 012 M9 Wd=20u Ing=0.4u 722 10€ 10€ 10€ 15 15 16 17 C10 Pca 1p S 등 불 FIG.110D Q9 N2BD4X5 900uA S50 器子 **X** Q8 N2BD4X5 RHP 700 RBHP 900uA

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit J M8 Wd=200u Ing=1u Md=200u | Ing=1u S <u>소</u> [ C: 0.6p M17 Wd=1u Ing=5u A L M6 Wd=20u Ing=1u M5 Wd=20u Ing=1u S M4 Wd=10u Ing=1u M1 Wd=200u Ing=1u S M16 Wd=50u Ing=1u M2 Wd=200u Ing=1u M3 Wd=10u Ing=1u M14 Wd=10u Ing=1u <u>~</u> JĮT . . . . . . . . . . . . . . . . M15 Wd=35u Ing=1u | M13 | Wd=10u | Ing=1u ~ \_\_\_ M11 Wd=1u Ing=5u M12 Wd=2.5u Ing=0.4u ▲ 「 S Wd=2.5u Ing=0.4u 1 ¥ M10 M9 Wd=5u Ing=0.4u **₩** 9 

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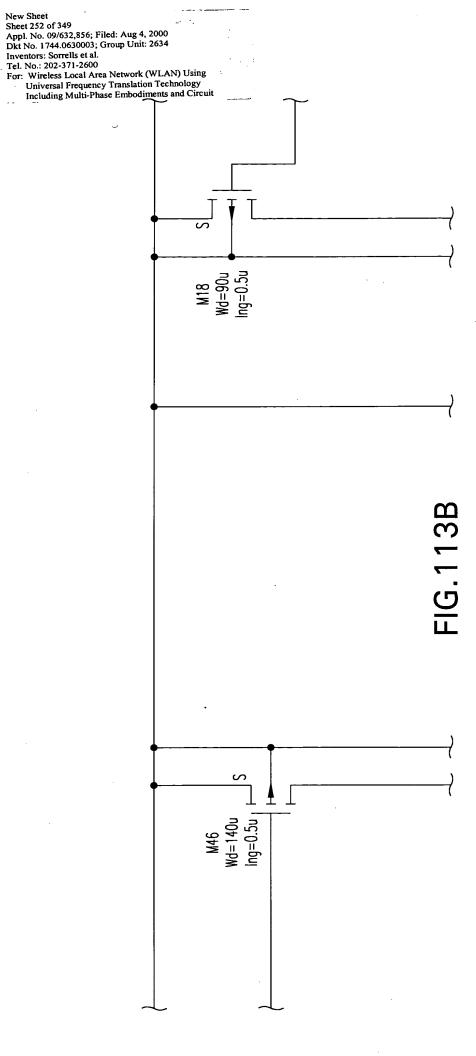
Replacement Sheet Sheet 247 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit M7 Wd=200u Ing=0.4u M8 Wd=5u Ing=0.4u M6 Su S Ing=0.4u \_\_\_ M3 Wd=50u Ing=0.4u <u>~]</u> ∳ [ FIG.112A ] ¥ [~ M1 Wd=20u Ing=0.4u 

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit 1.2 RBHP R3 1.2K RBHP

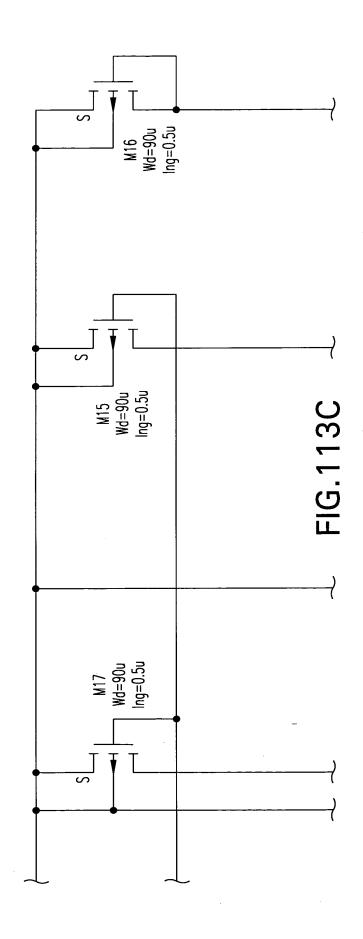
FIG.112C

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit 2.1m Q6 N2BD4X0 R12 400 RBHP R11 400 RBHP 588u √ 08 N2B04X5 588u 573u R10 1.5K RBHP Q4 N2BD4X5 Q3 N2BD4X5 573u 7.5 1.5 RBHP 261u

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit S M4 Wd=35u Ing=0.5u M2 Wd=70u Ing=0.5u ð M3 Wd=70u Ing=0.5u



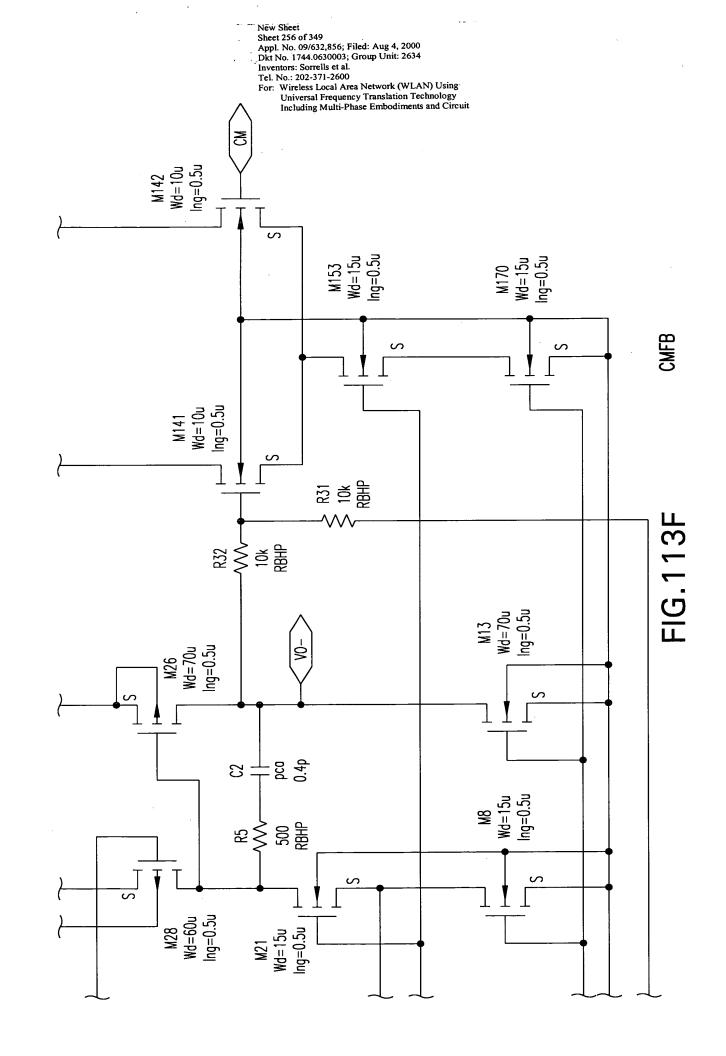
New Sheet
Sheet 253 of 349
Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



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For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit S M5 Wd=70u Ing=0.5u Wd=15u Ing=0.5u M6 Wd=15u Ing=0.5u **BIAS** M11 Wd=15u Ing=0.5u M12 Wd=30u Ing=7u M1 | Wd=70u ing=0.5u M7 Wd=35u Ing=0.5u FIG.113D で で ない へへへ M32 Wd=10u Ing=0.5u M31 Wd=10u Ing=0.5u M29 Wd=1u Ing=5u M30 Wd=2.5u Ing=0.4u M33 Wd=5u Ing=0.4u M34 <sup>1</sup> Wd=2.5u Ing=0.4u PD

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit M9 Wd=15u Ing=0.5u M22 Wd=15u Ing=0.5u S S M27 Wd=60u Ing=0.5u ₹ 200 200 8BHP 2. T = 2. 4. M25 Wd=70u Ing=0.5u M14 Wd=70u Ing=0.5u FIG.113E M36 Wd=1u Ing=5u M42 Wd=100u Ing=0.5u M45 Wd=70u Ing=0.5u  $\sim$ M35 Wd=1u Ing=5u M44 Wd=100u Ing=0.5u



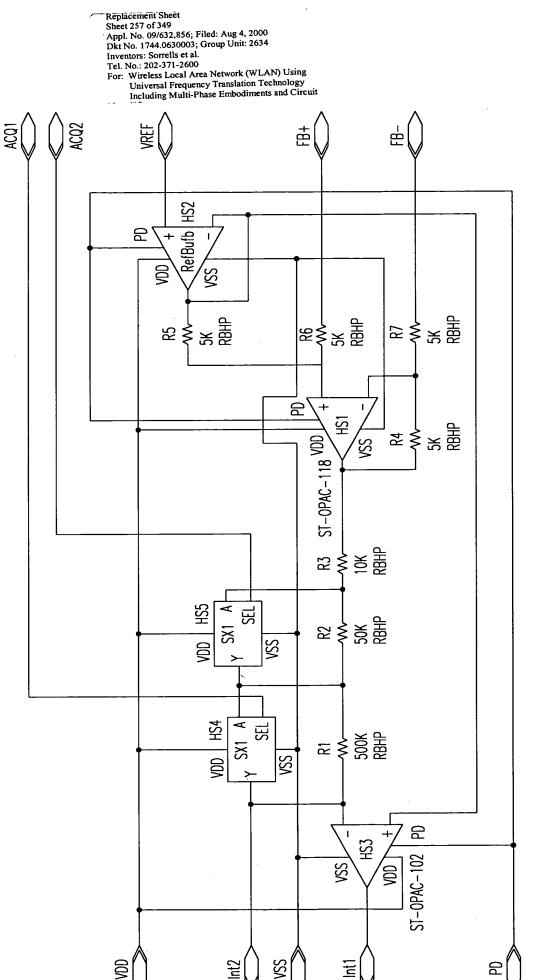


FIG.114

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit M4 Wd=60u Ing=1u S FIG. 115A S M3 Wd=60u Ing=1u M55 Wd=20u Ing=1u S 독 주 주 주 주 주 주 M54 Wd=20u Ing=1u M53 ' F Wd=1u Ing=10u M52 Wd=5u Ing=0.4u

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

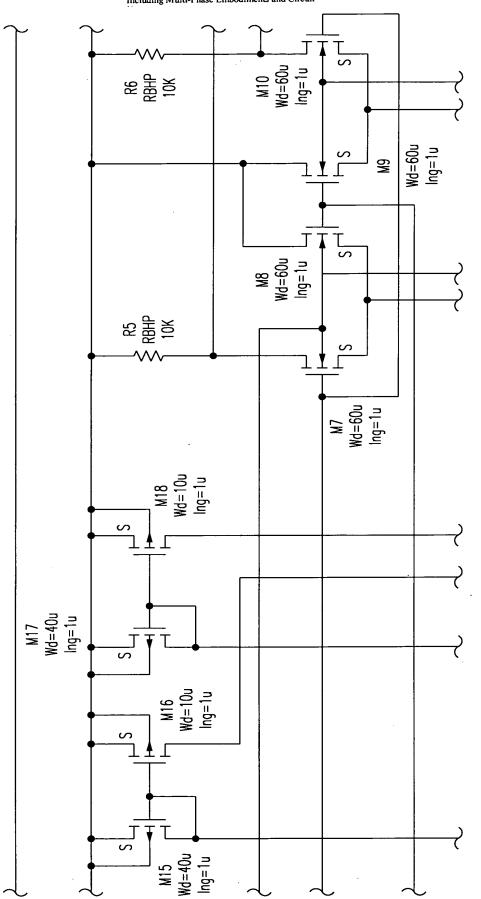


FIG.115B

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Sheet 260 of 349
Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit Q8 N2BD4X20 9 V 07 N2BD4X20 Q6 1 N2BD4X20 88 是 2.5 2.5 4 RBHP Q5 N2BD4X20 FIG.115C Q4 N2BD4X20 , Q3 , N2BD4X20 55 5 5 5 5 5 7 7 7 7 <u>1</u>11 M50 Wd=5u • Ing=0.4u

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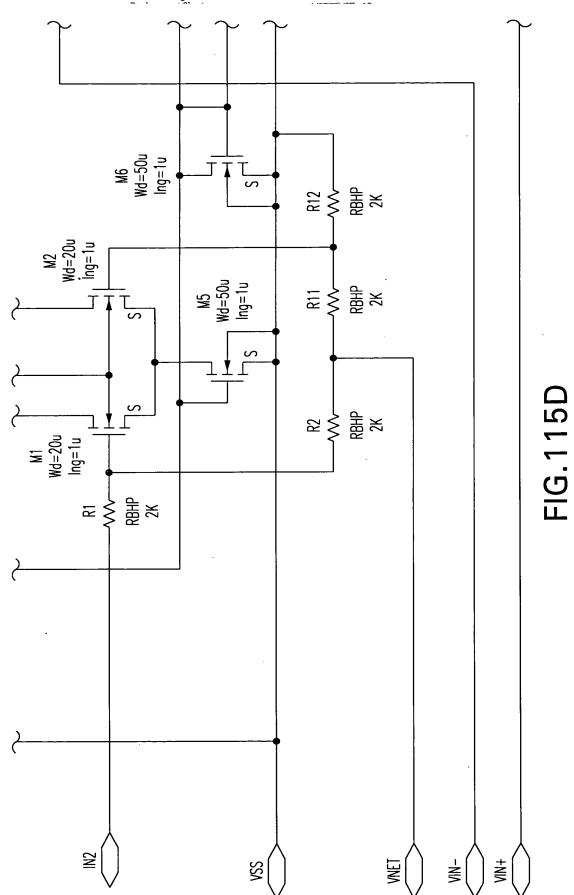
Appl. No. 09/632,856; Filed: Aug 4, 2000

Dkt No. 1744.0630003; Group Unit: 2634

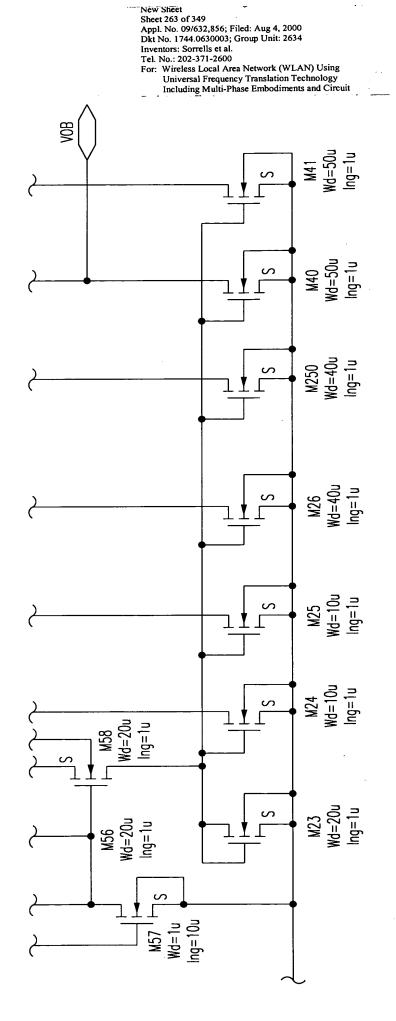
Inventors: Sorrells et al.

Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

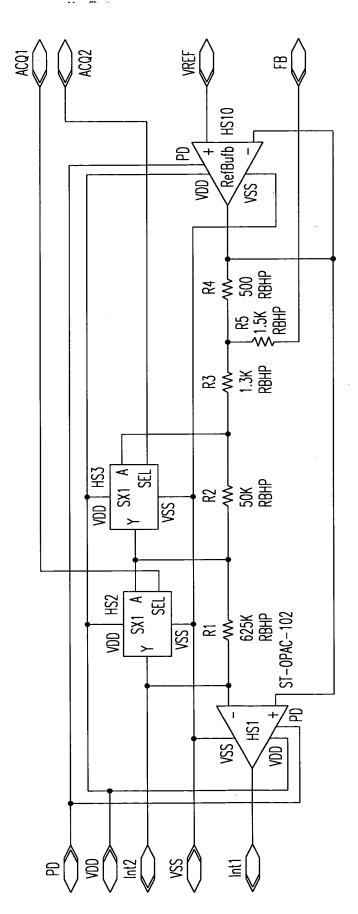


FIG.116

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit J M8 Wd=100u Ing=1u VOUT  $\begin{array}{c} M \\ Md = 100u \\ lng = 1u \end{array}$ C1 pca 0.5p M17 Wd=1u Ing=5u T S M5 Wd=10u Ing=1u M6 Wd=10u Ing=1u JŢŢ M4 Wd=10u Ing=1u M1 Wd=200u Ing=1u  $\frac{S}{\Box}$ ZŢ. S FIG.117 M16 Wd=60u Ing=1u M2 Wd=200u Ing=1u M3 Wd=10u Ing=1u M14 Wd=10u Ing=1u lľ M15 Wd=30u Ing=1u Wd=10u Ing=1u M11 Wd=1u Ing=5u Wd=2.5u Ing=0.4u -J<sup>‡</sup>L M9=5u Md=5u Ing=0.4u M10 [ Wd=2.5u Ing=0.4u VSS  $\stackrel{\pm}{\mathbb{N}}$ 9 8

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

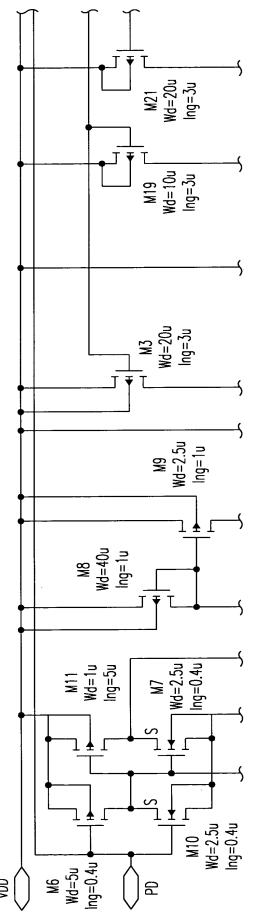


FIG.118A

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

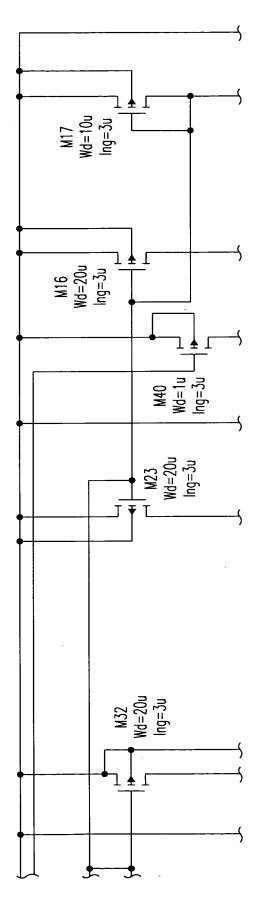


FIG.118B

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit Ing=2u J \$ L2 JFL M22 Wd=120u Ing=2u LS M20 Wd=3u Ing=2u M16 Wd=4u Ing=2u M2 Wd=96u Ing=3u M5 Wd=10u Ing=3u FIG.118C M1 Wd=96u Ing=3u M4 Wd=10u Ing=3u JķГ J∳[∽ M12 Wd=10u Ing=1u ZAI. TNIX NIX

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Windows Local Area Network (WLA) For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit VOUT M15 L Wd=120u Ing=2u M39 Wd=10u Ing=3u M14 Wd=300u Ing=2u M41 Wd=1u Ing=3u 다 다 I Lo M29 Wd=12u Ing=1u 224 S M33 Wd=3u Ing=2u M34 Wd=6u Ing=2u J ¥ L2 M25 Wd=18u Ing=2u M35 Wd=6u Ing=2u M38 Wd=12u Ing=2u M31 Wd=60u Ing=2u  $\Gamma$ M36 Wd=3u Ing=2u M37 Wd=12u Ing=2u L. J ₹ L 2 M30 Wd=60u Ing=2u ı ∤ ⊡ M28 Wd=24u Ing=2u M27 Wd=32u Ing=3u

FIG.118D

Replacement Sneet Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit INTRE EXTRE ST-OPAC-117 VDD VSS 38 <u>a</u> ST-0PAC-116 V0D 1 VSS R3 3.145K \$ RBHP \$ 쮼 햦 HS7 M10 Wd=40u Ing=1u <u>B</u> 8 FIG.119 014 S = 1R10 200 图形 R50 678 開発 VSS 015 νT ND4X1D4 016 ND4X1D4 M11 Wd=40u Ing=1u Q18 Q17 ND4X1D4 <u>a</u> ND4X1D4 019 ND4X1D4 020 ND4X1D4 921 ND4X1D4

022

024

ND4X1D4

N2B05X07

M12 Wd=1u Ing=5u

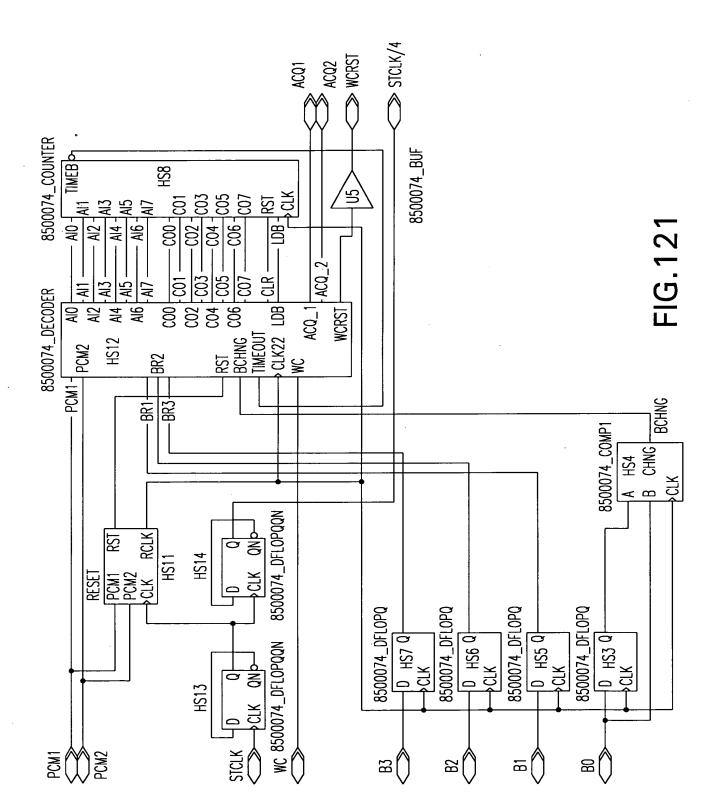
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Replacement Sheet Sheet 271 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit CLKB\_PD TXB\_PD RXB\_PD BG\_P0 NOR1L) PMC1

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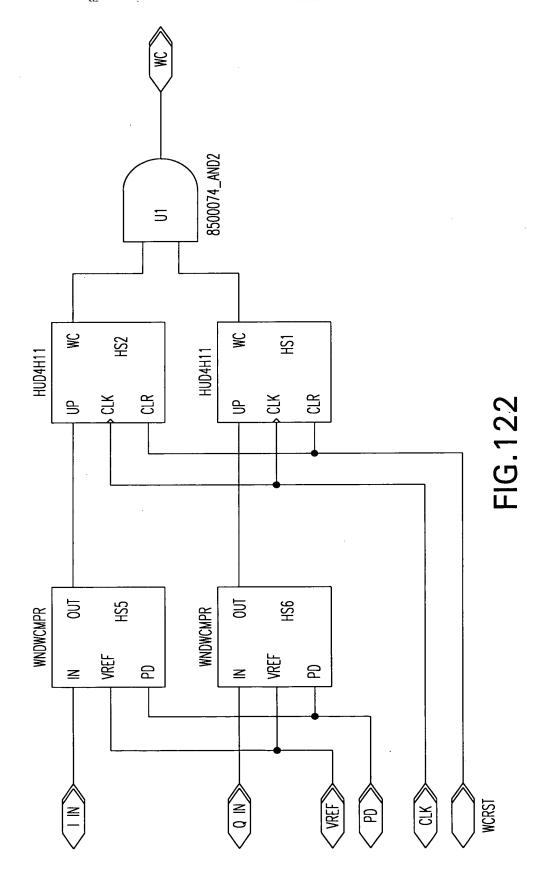
Inventors: Sorrells et al.

For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

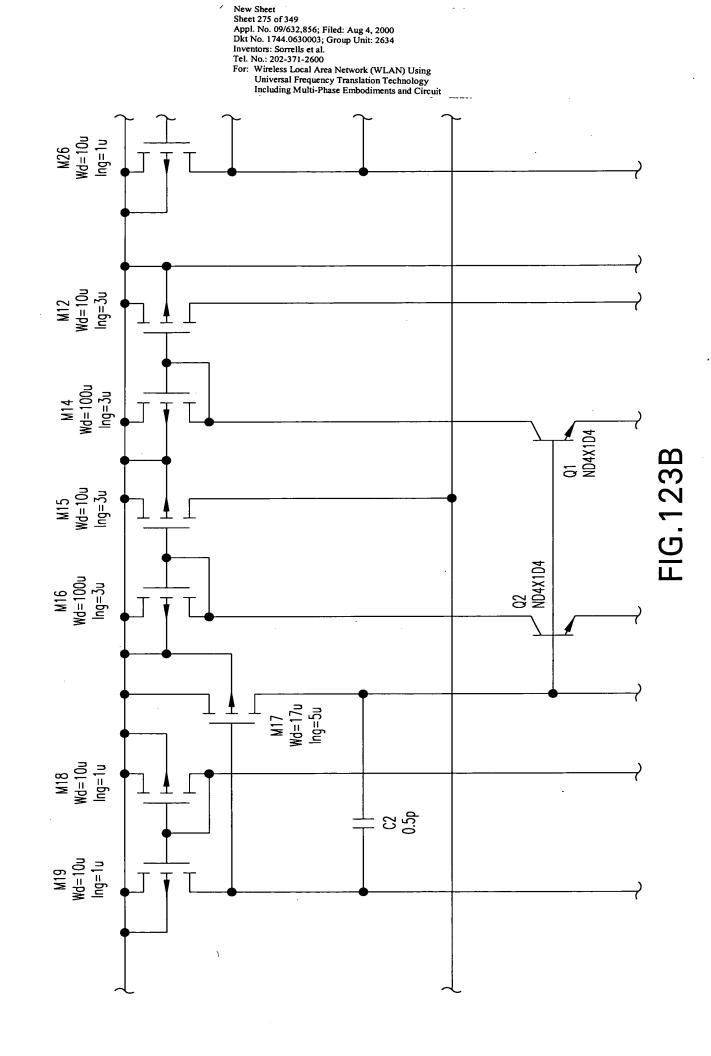


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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

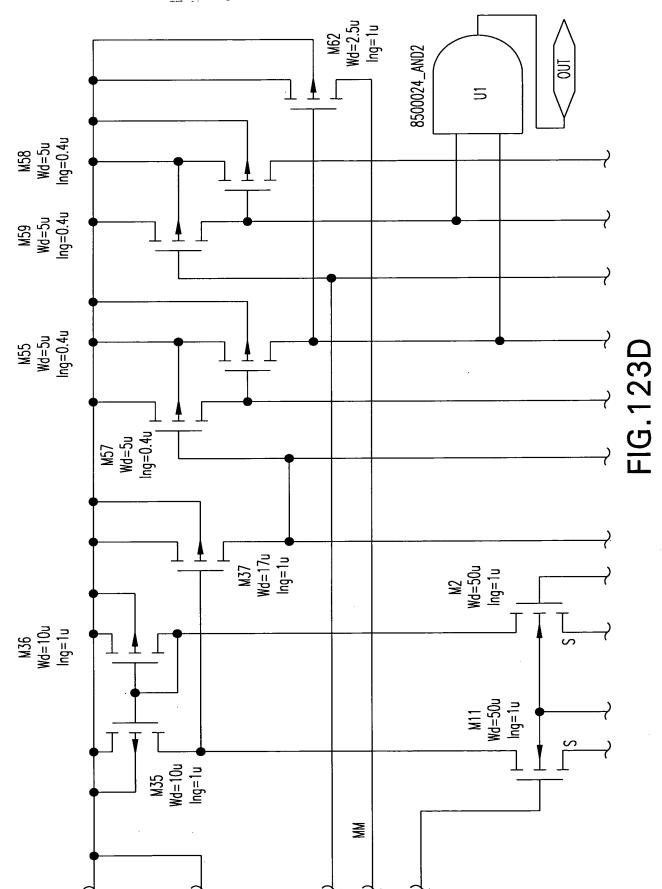


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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit R3 25K RBHP M20 Wd=17u Ing=1u  $\infty$ REF M21 Wd=10u Ing=1u 十 12.0 15.0 M22 Wd=10u Ing=1u FIG.123A M23 Wd=10u Ing=1u M24 Wd=10u Ing=2u M42 Wd=200u Ing=0.4u M39 Wd=5u Ing=0.4u 9

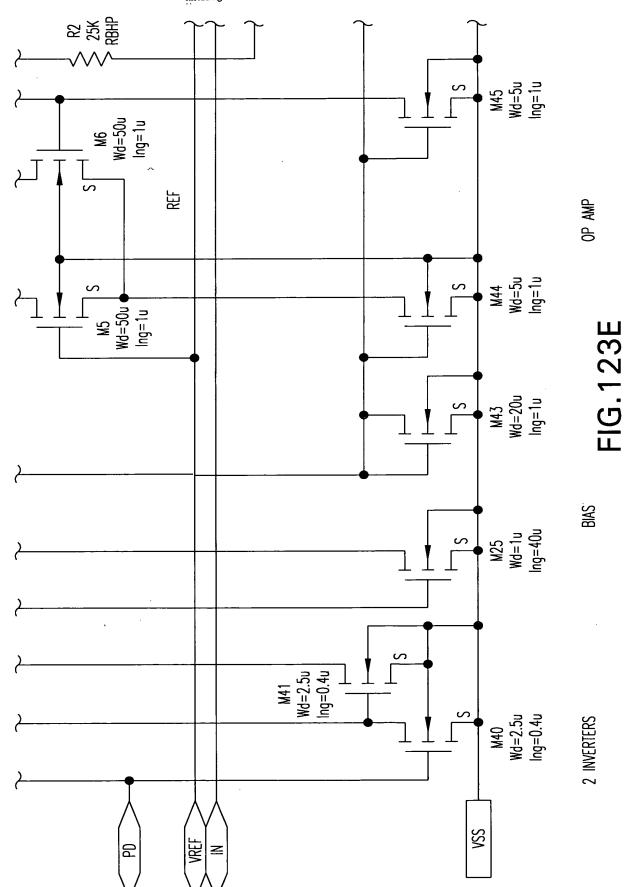


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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit Wd=17u Ing=1u M1 Wd=50u Ing=1u M33 Wd=10u Ing=1u M9 Wd=50u Ing=1u M32 Wd=10u Ing=1u \ Wd=2u Ing=3u FIG.123C M30 Wd=100u Ing=3u 03 ND4X1D4 M54 Wd=2u Ing=3u Q6 ND4X1D4 M29 Wd=100u Ing=3u M28 Wd=17u Ing=5u Ы M27 Wd=10u Ing=1u

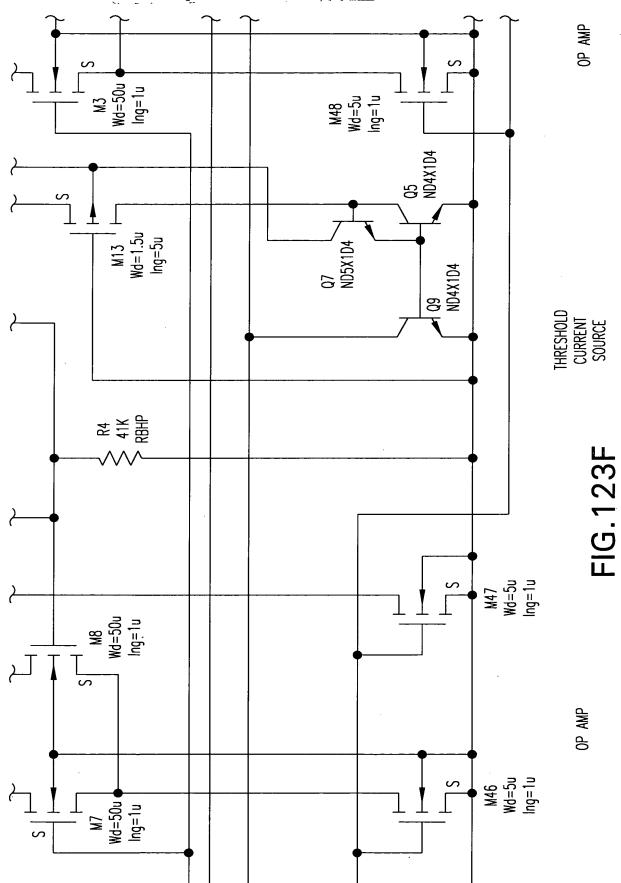
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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit



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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
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Including Multi-Phase Embodiments and Circuit



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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

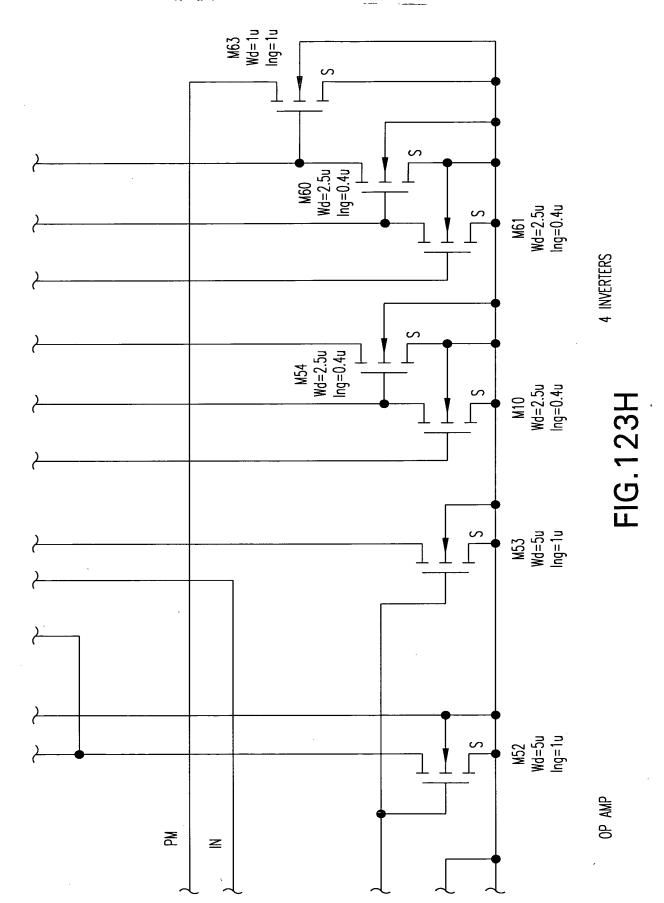


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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit M51 Wd=5u Ing=1u M50 Wd=5u Ing=1u OP AMP S FIG.123G Q4 ND4X1D4 M36 ' M36 ' Wd=1.5u Ing=5u 08 ND4X1D4 최 Q10 ND4X1D4 HYSTERESIS CURRENT SOURCE M49 Wd=5u Ing=1u M44 Wd=50u Ing=1u 눋

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

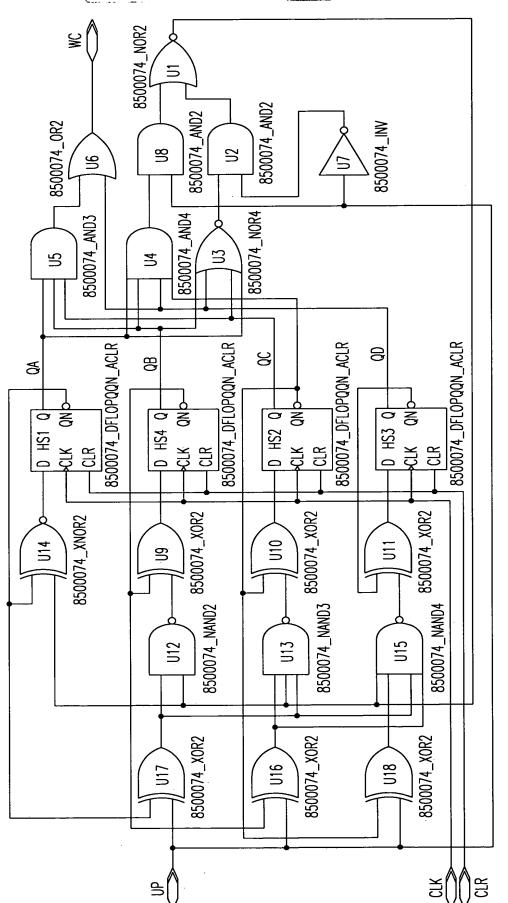
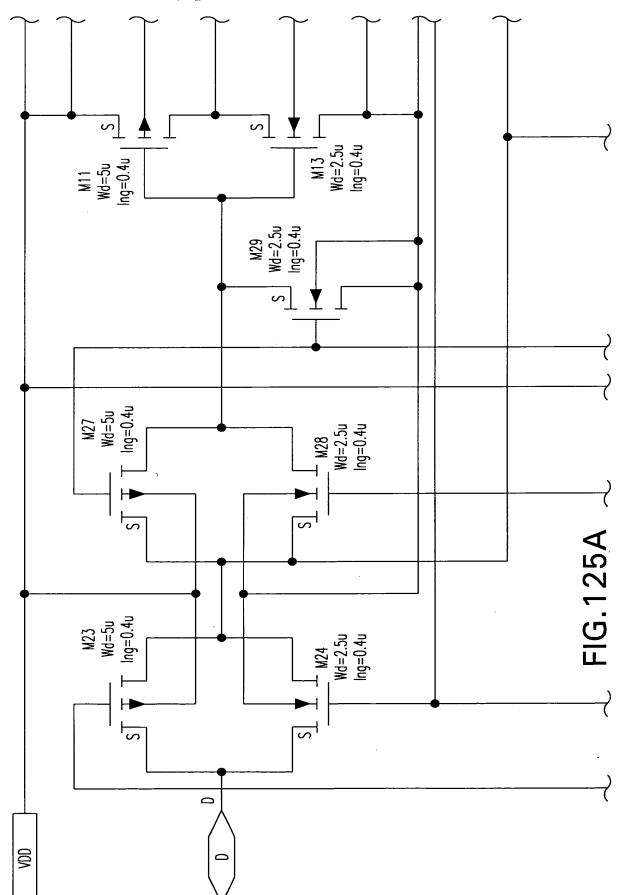


FIG.124

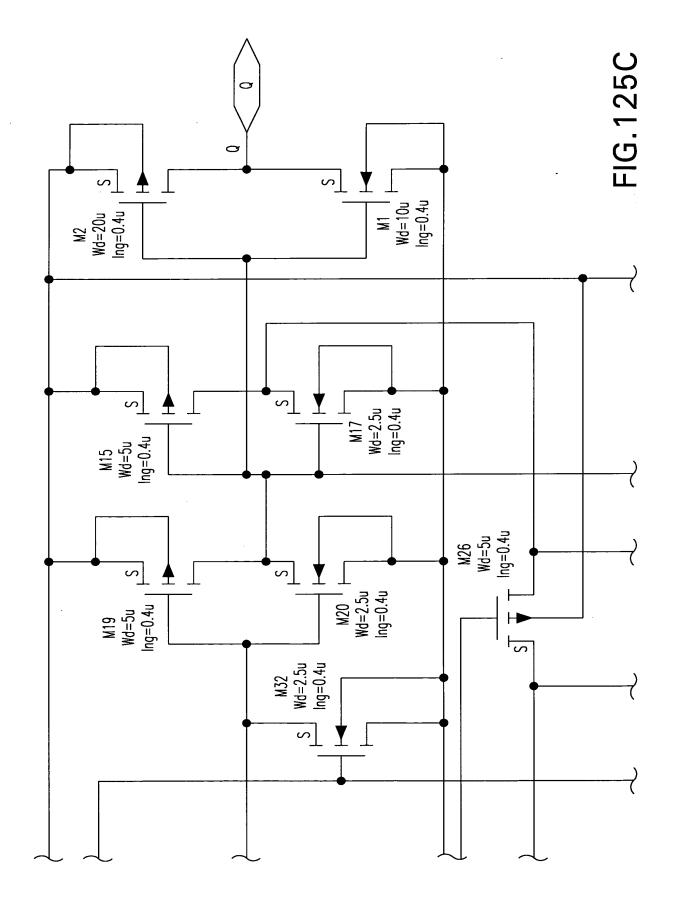
Replacement Sheet
Sheet 283 of 349
Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit M13 <sup>1</sup> Wd=2.5u Ing=0.4u M29 Wd=2.5u Ing=0.4u L M28 Wd=2.5u Ing=0.4u S



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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit FIG.125B M31 Wd=5u Ing=0.4u L M30 Wd=2.5u Ing=0.4u S M21 Wd=5u Ing=0.4u \_\_ M22 \_\_ Wd=2.5u lng=0.4u S M14 Wd=2.5u Ing=0.4u M12 Wd=5u Ing=0.4u M10 Wd=5u Ing=0.4u

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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

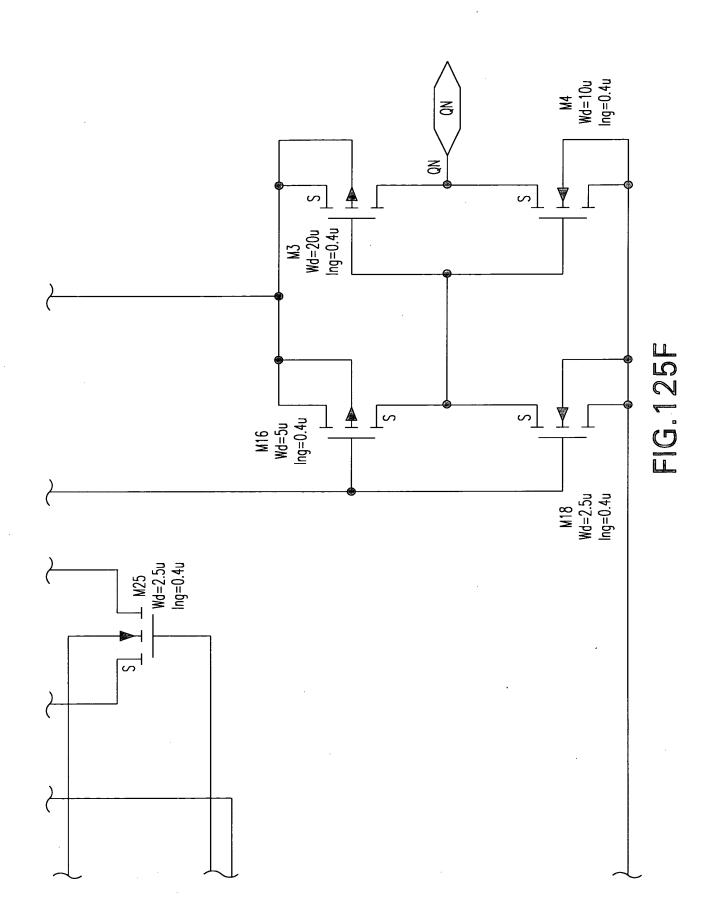


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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit M7 Wd=2.5u Ing=0.4u  $\lceil \sim$ M5 Wd=5u Ing=0.4u M6 L Wd=2.5u Ing=0.4u 띥 VSS CK

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Appl. No. 09/632,856; Filed: Aug 4, 2000
Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit FIG.125E S

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Inventors: Sorrells et al.
Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit



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For: Wireless Local Area Network (WLAN) Using
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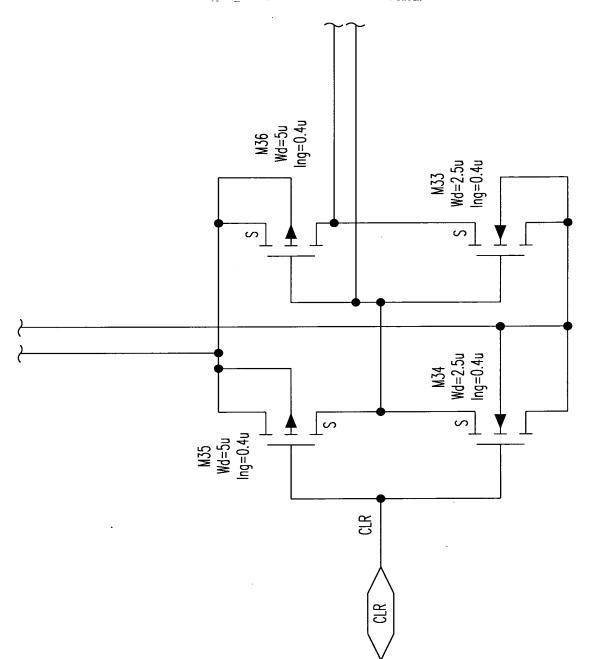
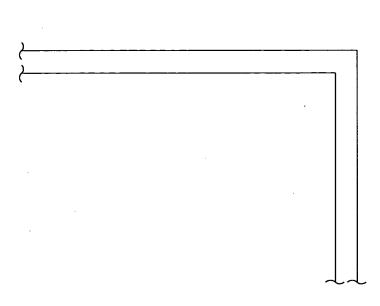


FIG.125G

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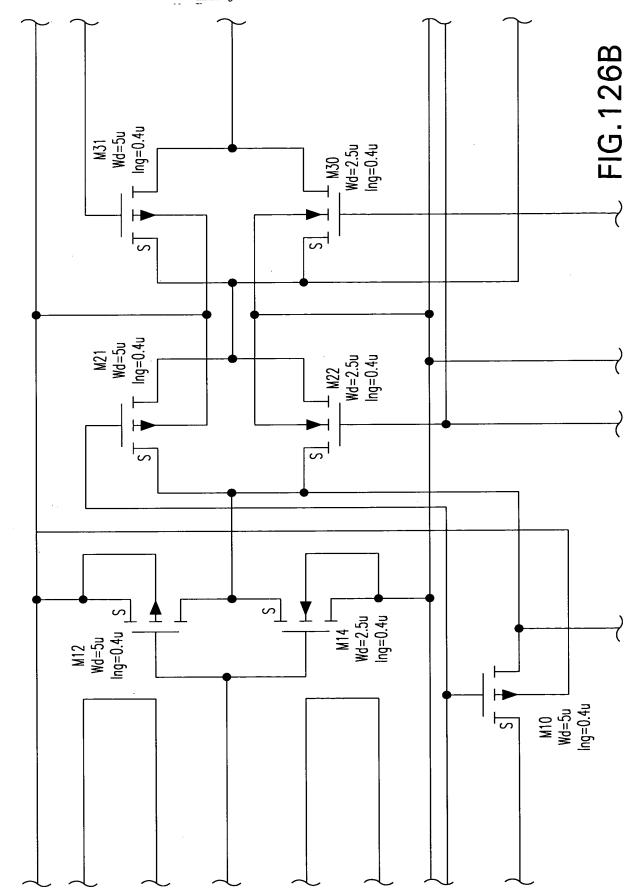
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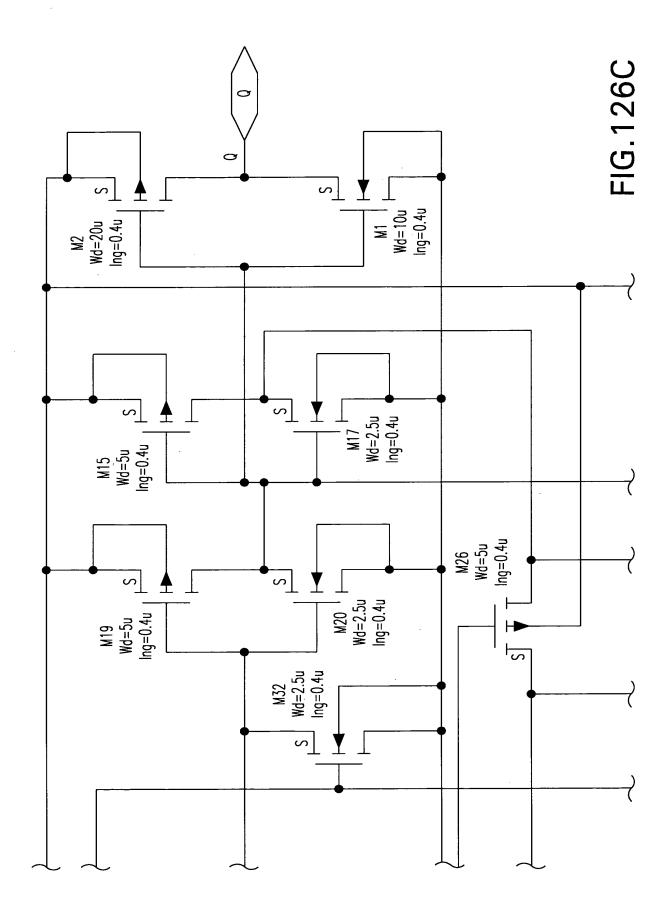
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Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit M13 | Wd=2.5u Ing=0.4u M11 Wd=5u Ing=0.4u M29 Wd=2.5u. Ing=0.4u M27 Wd=5u Ing=0.4u L M28 Wd=2.5u Ing=0.4u S FIG.126A M23 Wd=5u Ing=0.4u \_ M24 \_ Wd=2.5u Ing=0.4u S  $\Gamma$ S 9

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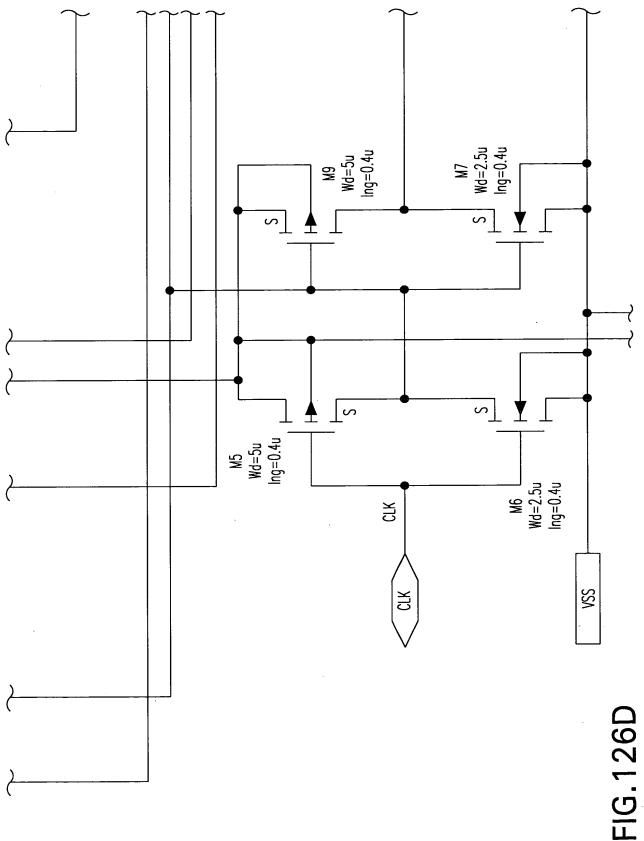
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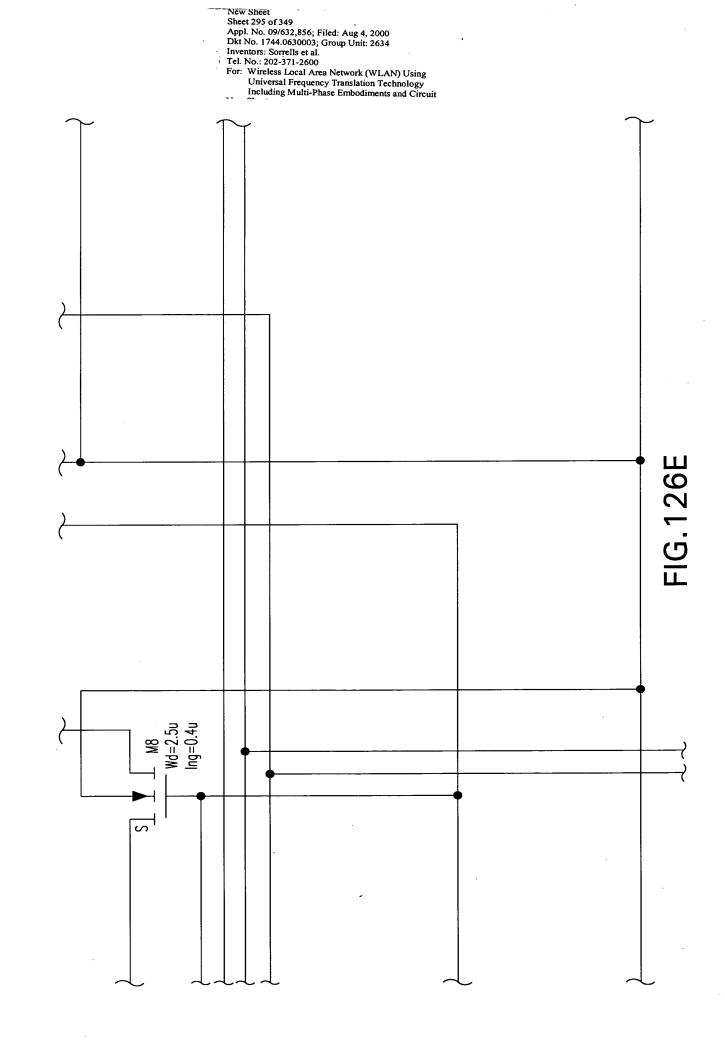


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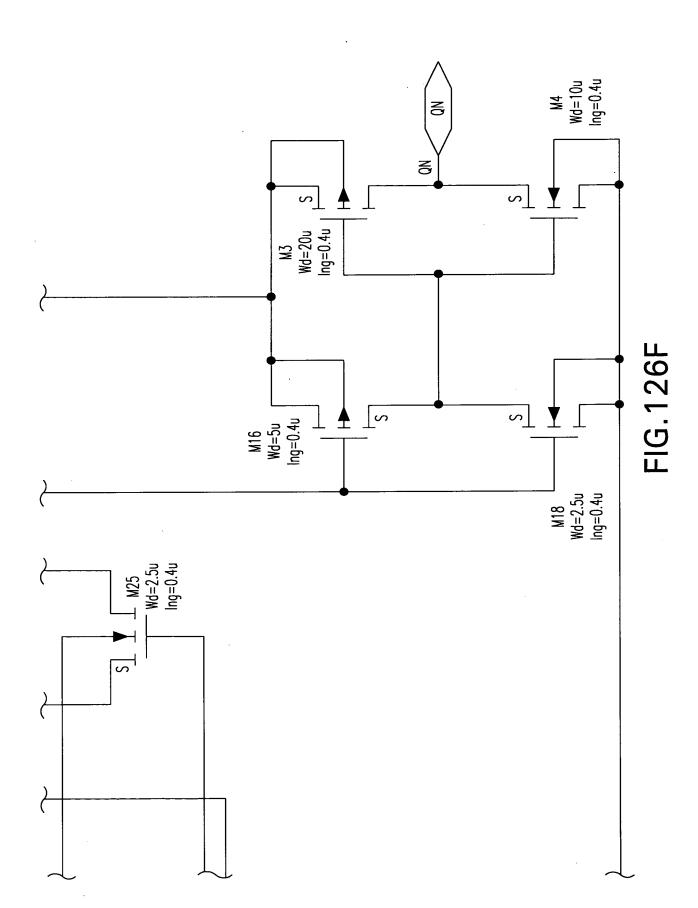


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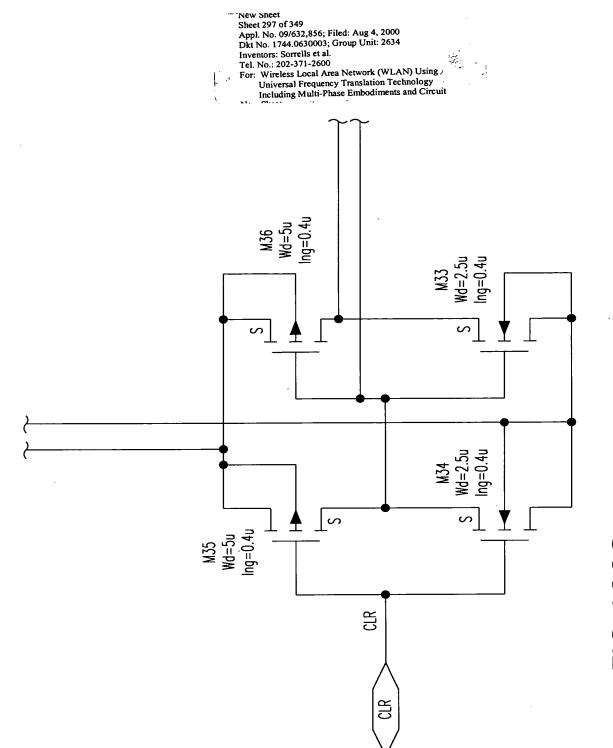
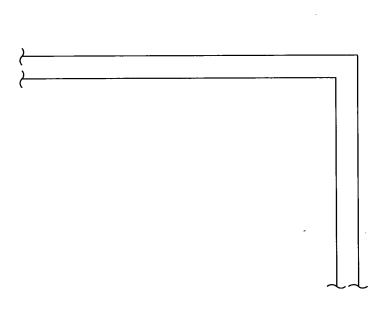


FIG.126G

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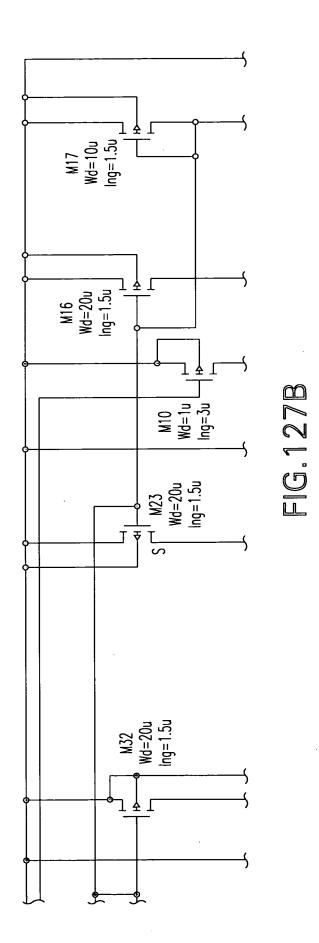


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Inventors: Sorrells et al.
Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit M21 Wd=20u Ing=1.5u M19 Wd=10u Ing=1.5u M9 Wd=20u Ing=1u M8 Wd=40u Ing=1u M11 Wd=1u Ing=5u ŢŢŢ.  $\frac{1}{2}$ M10 Wd=2.5u lng=0.4u

M6 Wd=5u Ing=0.4u

FIG.127A

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Inventors: Sorrells et al.
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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit <u>∿] ∳ [</u> l∳ſ M22 Wd=120u Ing=1u  $\sim$  I M16 Wd=4u M2 Wd=96u Ing=1.5u M5 Wd=10u Ing=1.5u M1 Wd=96u Ing=1.5u M4 Wd=10u Ing=1.5u S SS

FIG.127C

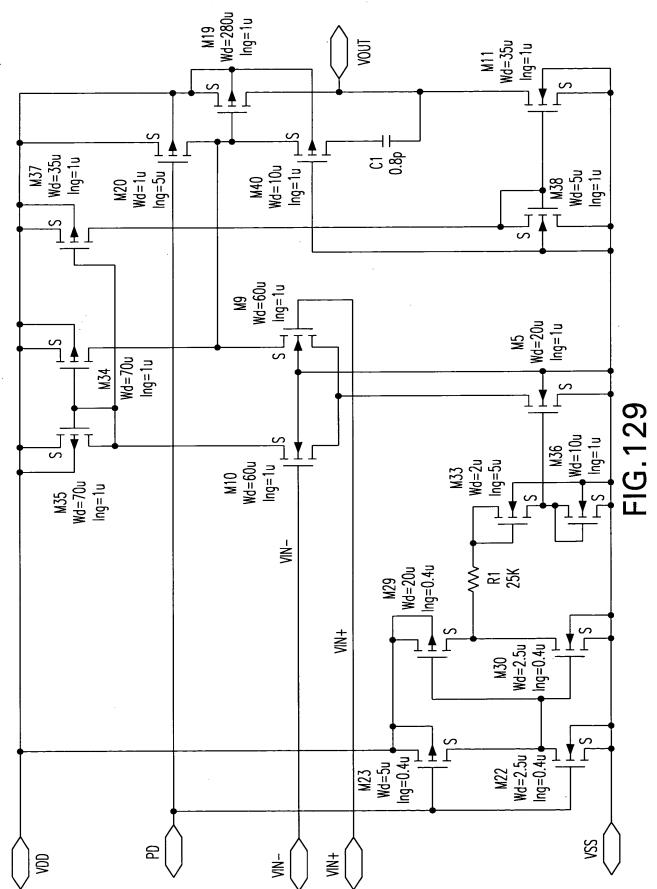
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Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit VOUT M39 Wd=10u Ing=1.5u 1 <del>|</del> [ \sim M15 L Wd=120u Ing=1u Wd=180u Ing=1u S M41 Wd=5u Ing=3u R2 1200 RP1P C2 0.3c **★** [ S M28 Wd=12u Ing=1u S M33 Wd=3u Ing=1u M34 Wd=6u Ing=1u ] ∳ [∽ M25 Wd=12u Ing=1u M35 Wd=6u Ing=1u M38 Wd=12u Ing=1u S M31 Wd=60u Ing=1u M36 Wd=3u Ing=1u M37 Wd=12u Ing=1u  $\Gamma$ J∳[ <u>∞</u>] ₹ M30 Wd=60u Ing=1u **₹** [∞ M29 Wd=24u Ing=1u M27 S Wd=32u Ing=1.5u

FIG.127D

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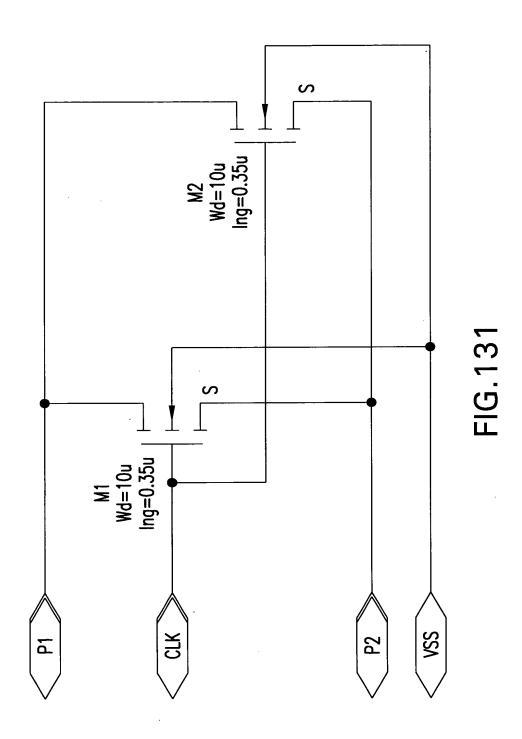
For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit MOUT M6 Wd=100u Ing=2u ¥ ₩ ĮĮ. M12 L Wd=300u Ing=2u ე 1.5 7.3 1.9 RBHP M3 Wd=10u Ing=2u ~ ı∳⊬ M11 Wd=30u Ing=2u M5 Wd=10u Ing=2u M13 Wd=200u Ing=2u ي آ ı¥r FIG.128 ST ZĮ. Š M10 Wd=20u lng=2u M4 Wd=10u Ing=2u M14 Wd=200u Ing=2u Wd=10u Ing=1u 55 笑聲 M17 Wd=10u Ing=1u Wd=10u Ing=2u Wd=1u Ing=5u M15 Wd=2.5u Ing=0.4u M16 Wd=200u Ing=0.4u ¥ ℃ M2 Wd=5u Ing=0.4u Wd=2.5u Ing=0.4u ŧ 品 VSS

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For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit Ing=0.4u Wd=100u M1 lng=0.4u Wd=100u ⊤ M2 Ing=0.4u Wd=200u M10 Ing=0.4u Wd=200u M9 S Ing=0.4u Wd=5u M8 lng=0.4u Wd=10u M7 S Ing=0.4u Wd=5u M6 Ing=0.4u Wd=10u M5 FIG.130 Ing=0.4u Wd=5u M4 ing=0.4u Wd=10u M3 S

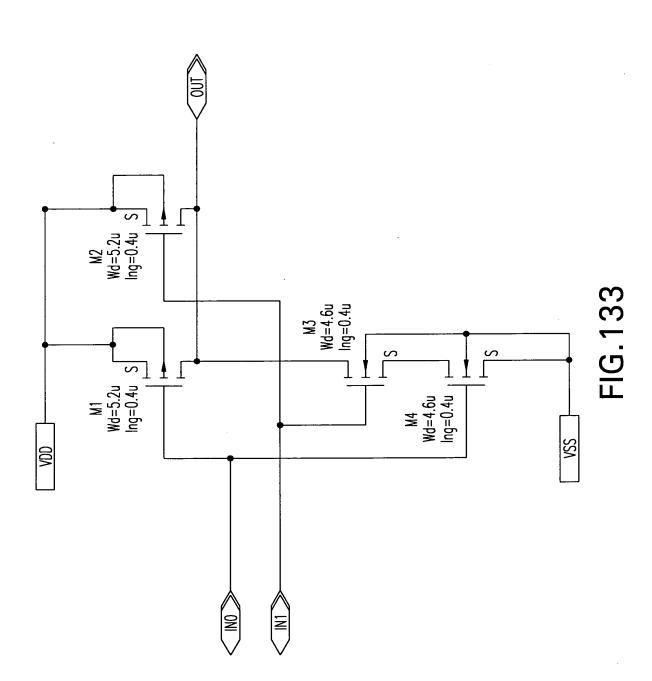
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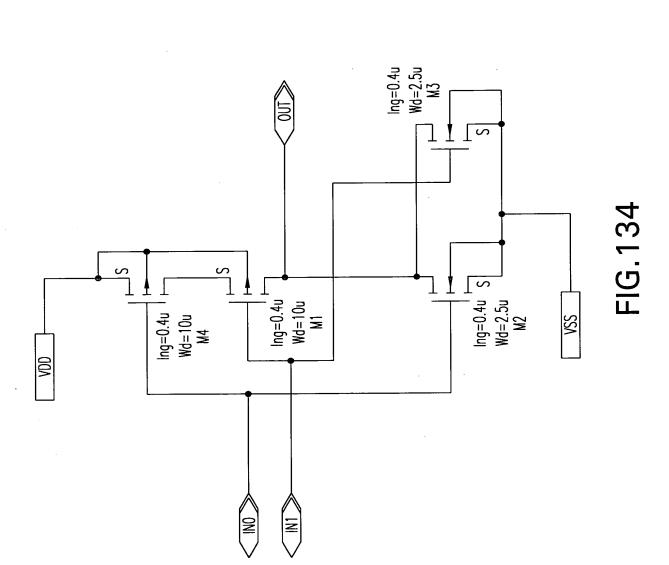
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Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit M12 Wd=20u Ing=0.4u L M10 Wd=10u Ing=0.4u Ś L Wd=10u Ing=0.4u Ing=0.4u Wd=20u Ing=0.4u Wd=20u **M**2 M13 M1 Wd=10u Ing=0.4u S Ś VSS 9 Ing=0.4u  $^{\perp}$  Wd=10u Wd=20u Ing=0.4u M E ا ک M8 Wd=5u Ing=0.4u Ing=0.4u Wd=10u Ing=0.4u M6 Wd=5u Ing=0.4u Wd = 10uJĪÇ Z T L Ing=0.4u Ing=0.4u Wd=5u Wd=10u ₩ 9 VSS SE

FIG. 132

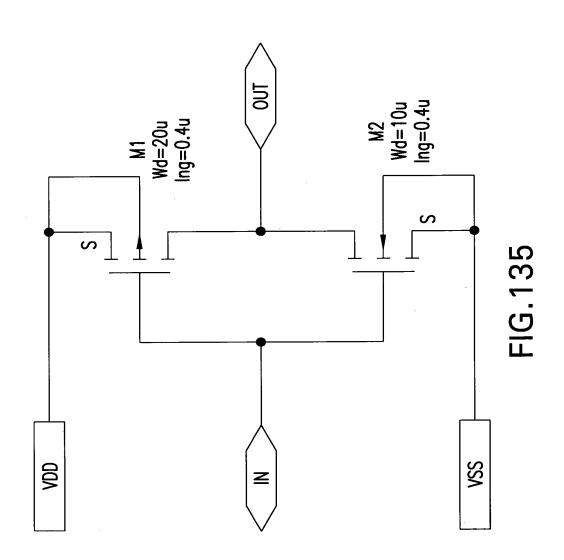
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Including Multi-Phase Embodiments and Circuit



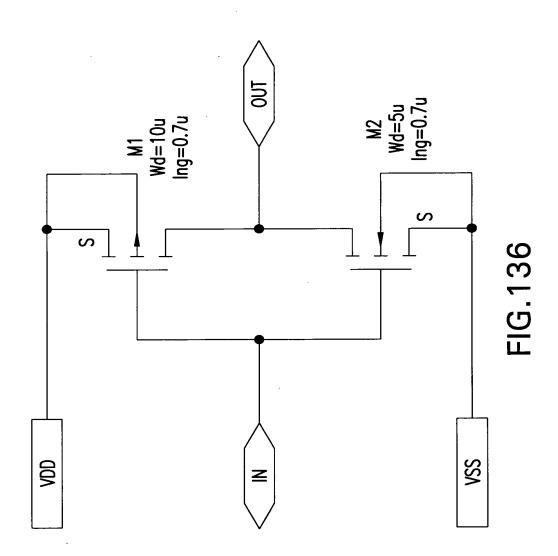
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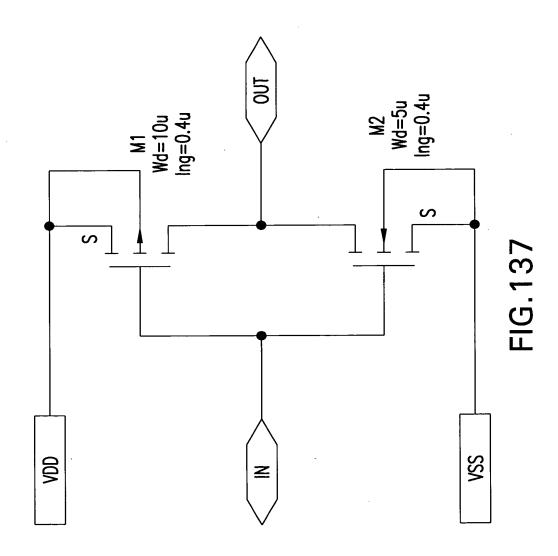
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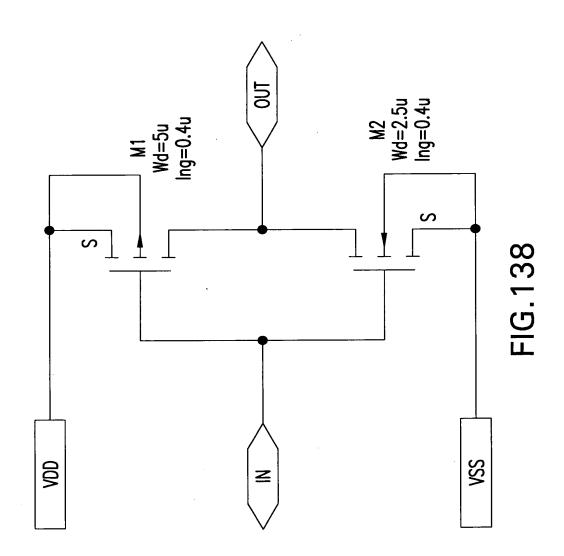
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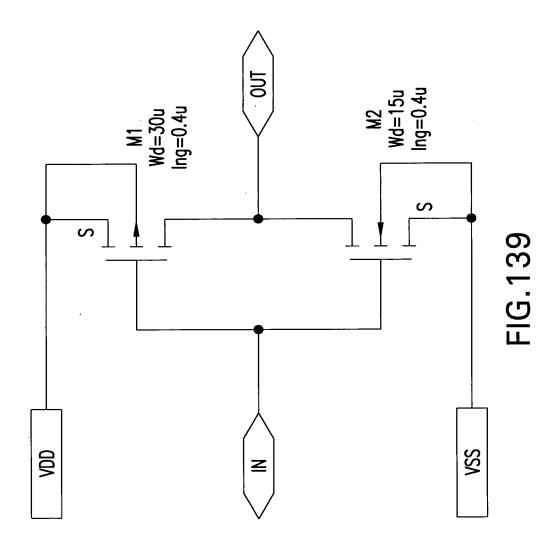
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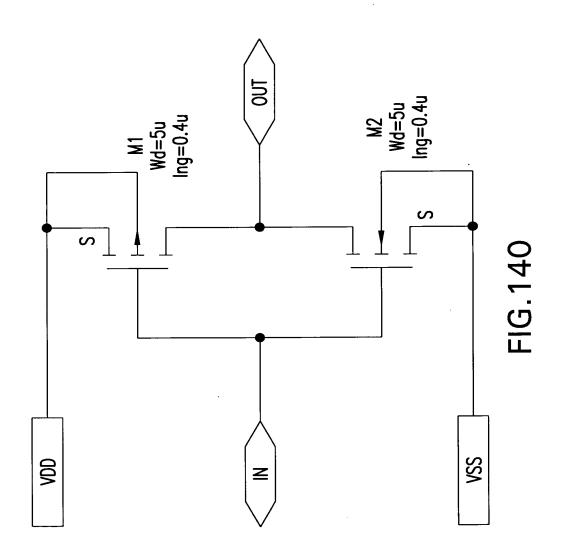
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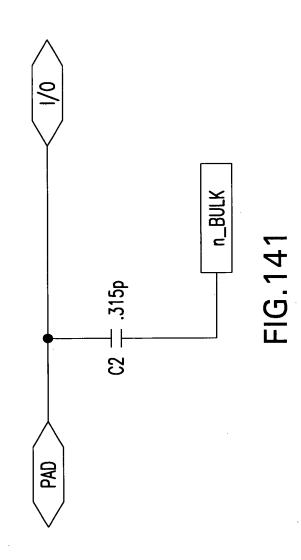
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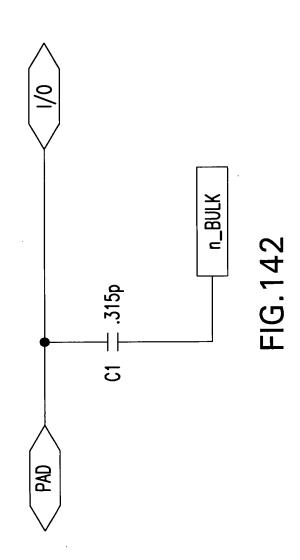
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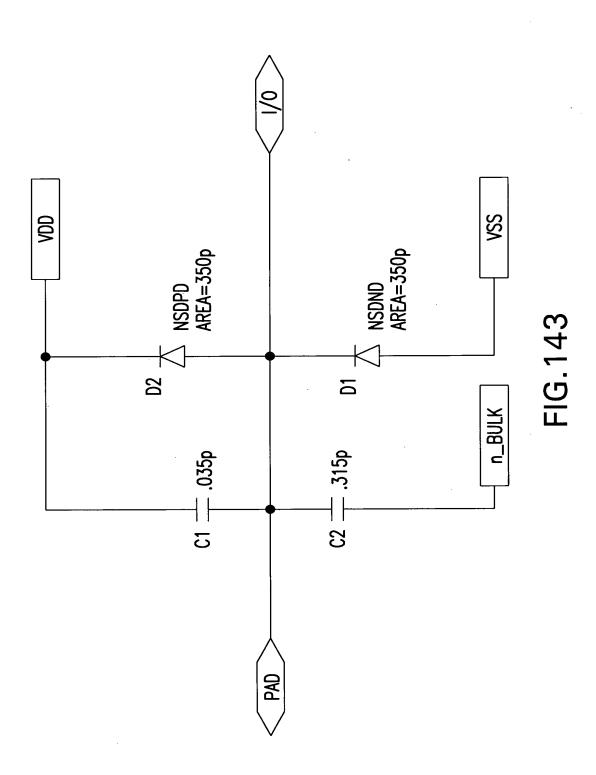


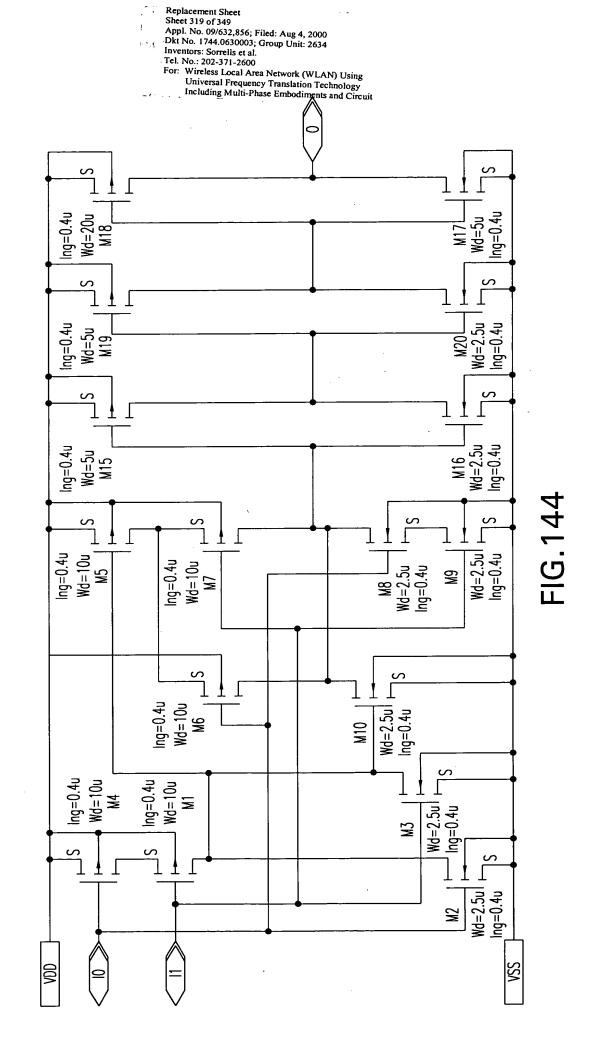
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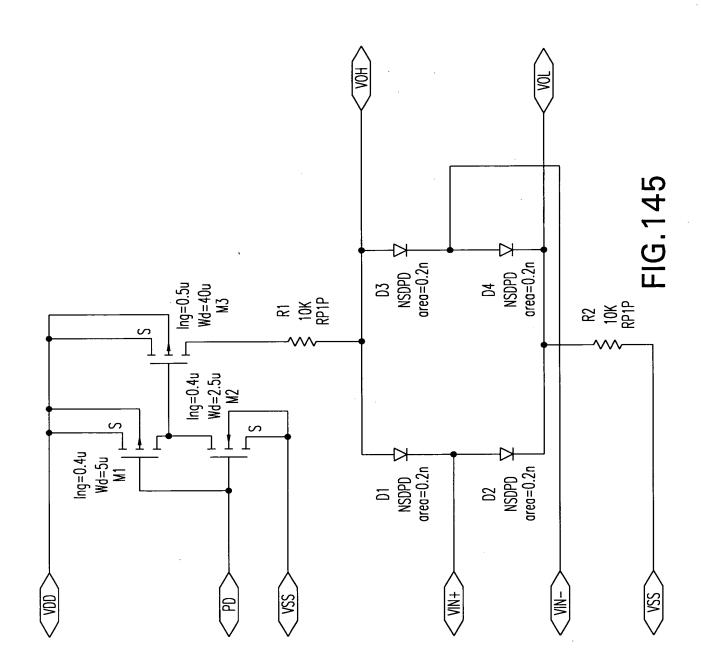
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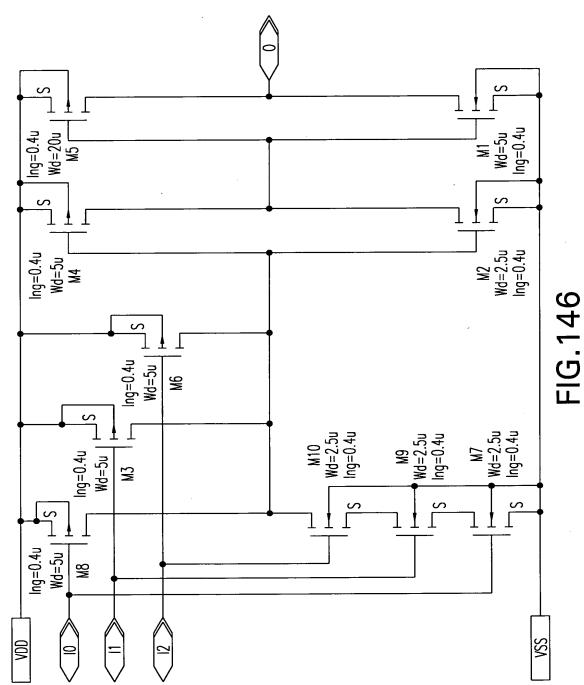


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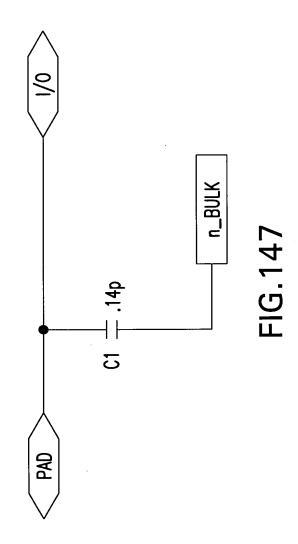
Inventors: Sorrells et al.

Tel. No.: 202-371-2600

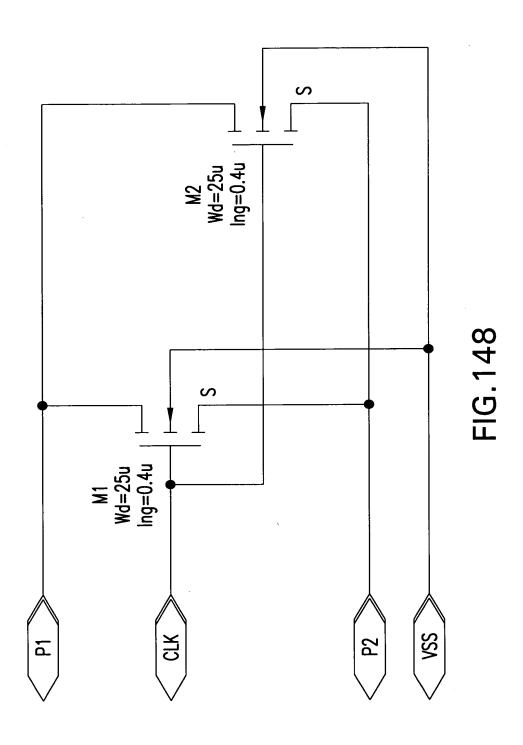
For: Wireless Local Area Network (WLAN) Using
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Including Multi-Phase Embodiments and Circuit



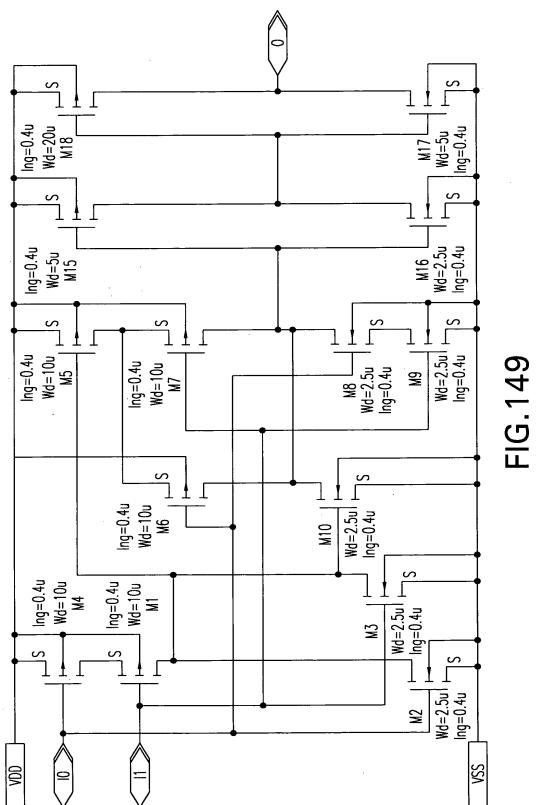
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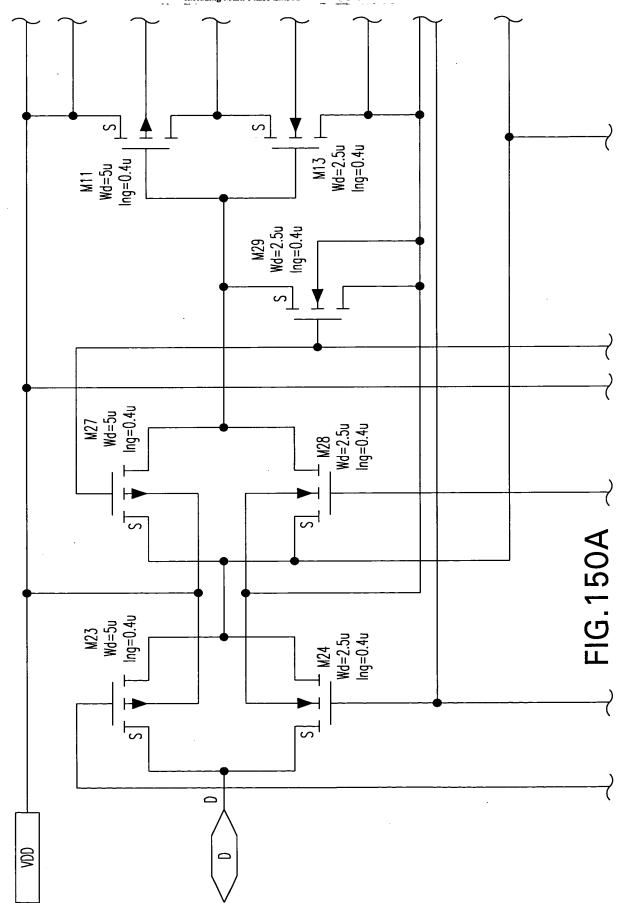
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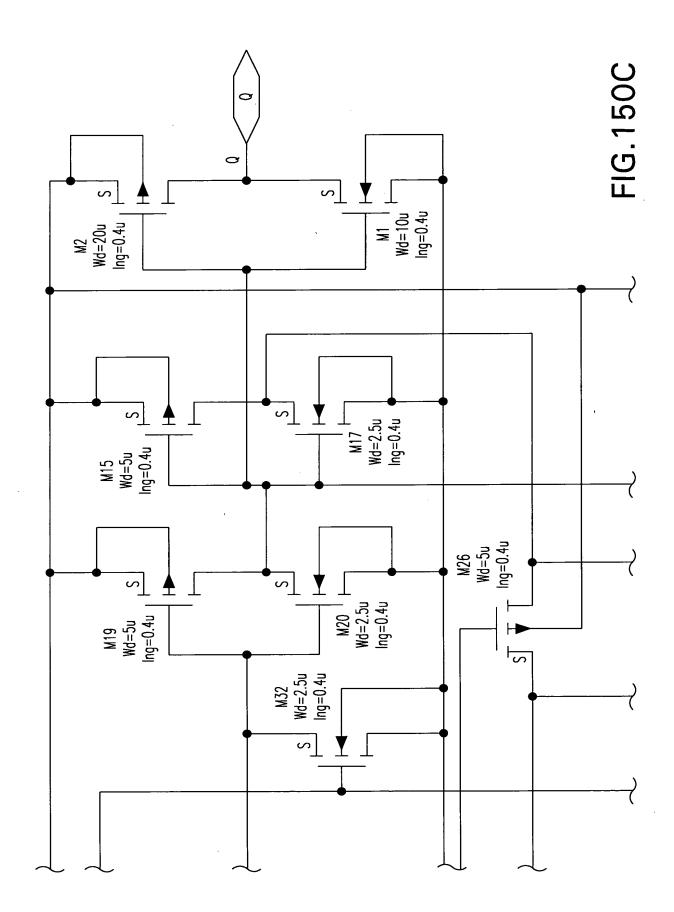


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Inventors: Sorrells et al.
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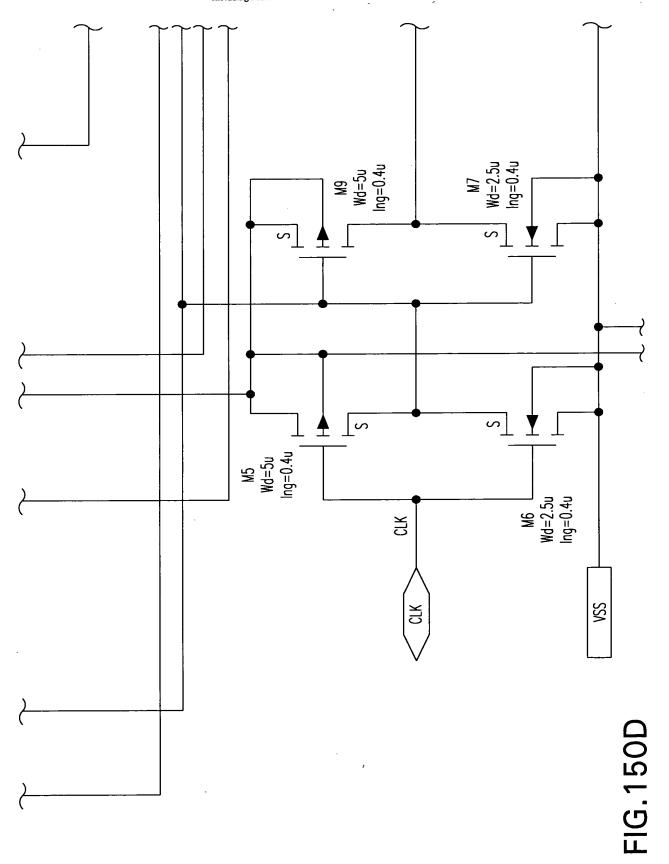


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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600 For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit FIG.150B M31 Wd=5u Ing=0.4u L M30 Wd=2.5u Ing=0.4u S <u>~</u> M21 Wd=5u Ing=0.4u \_\_ M22 \_\_ Wd=2.5u Ing=0.4u S M12 Wd=5u Ing=0.4u M10 Wd=5u Ing=0.4u

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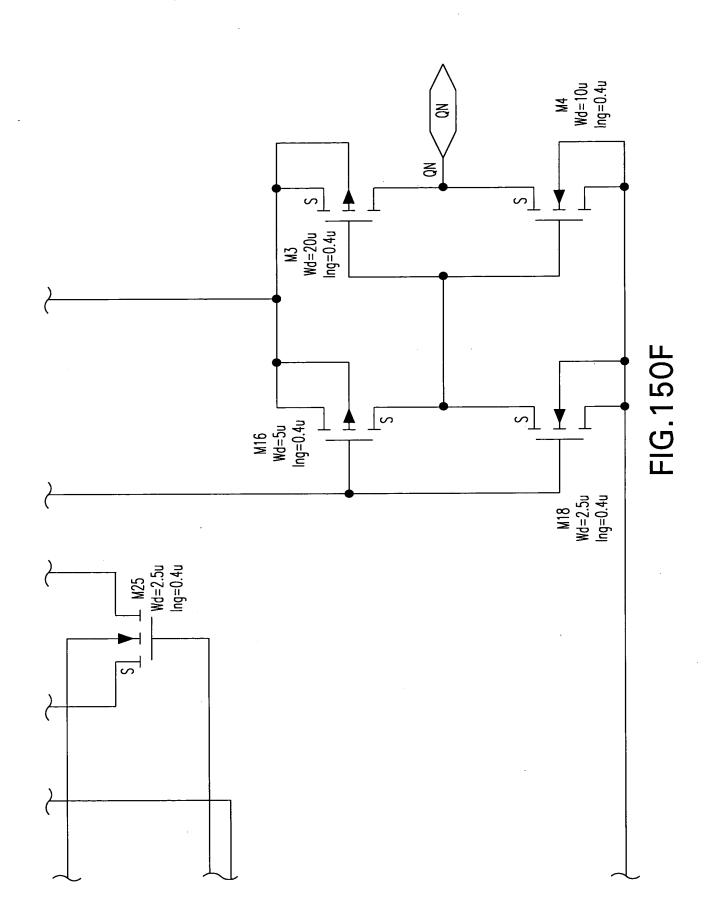


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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit

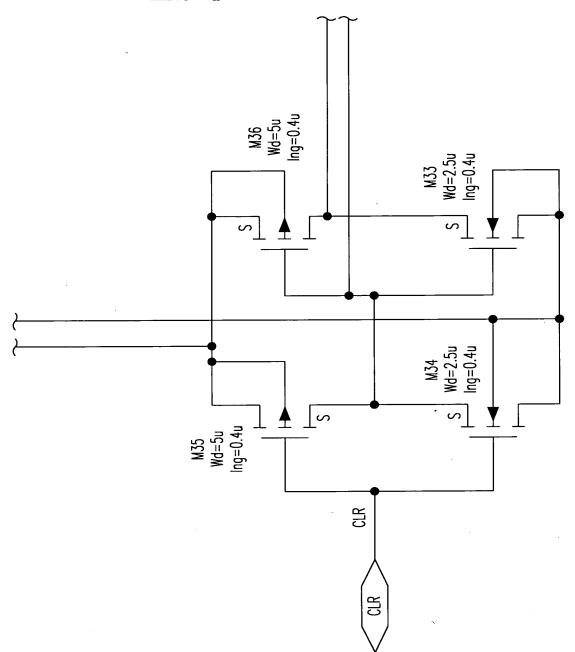
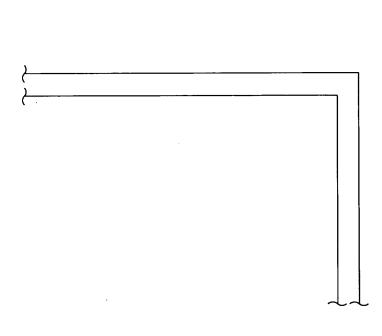
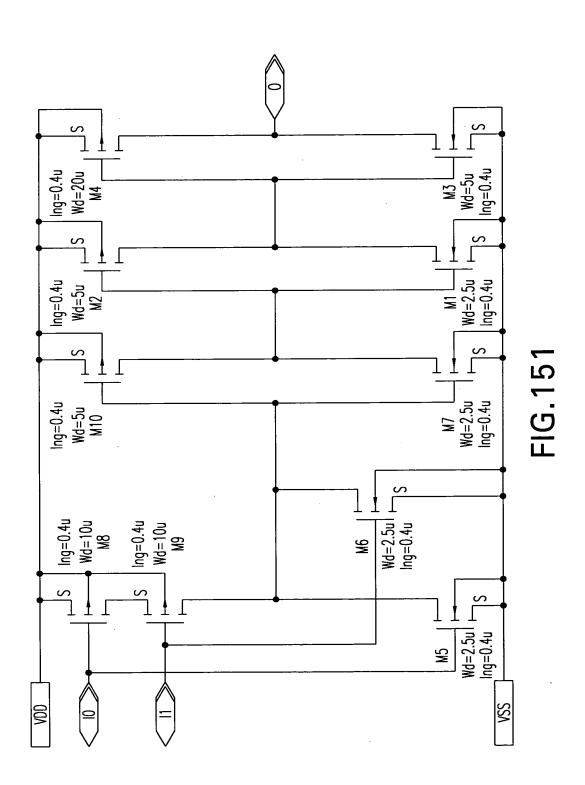


FIG.150G

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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-260
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Dkt No. 1744.0630003; Group Unit: 2634
Inventors: Sorrells et al.
Tel. No.: 202-371-2600
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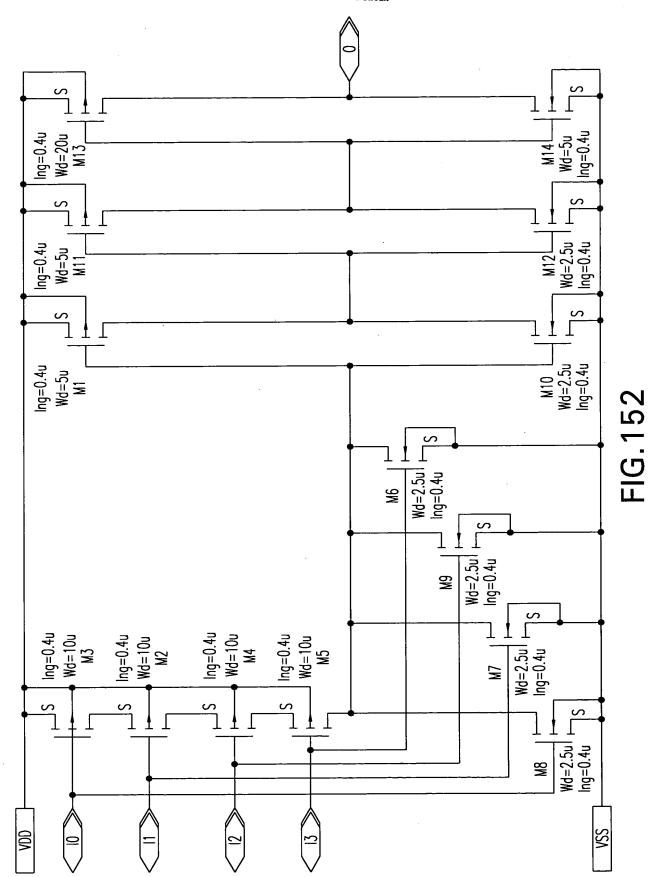
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Dkt No. 1744.0630003; Group Unit: 2634

Inventors: Sorrells et al.

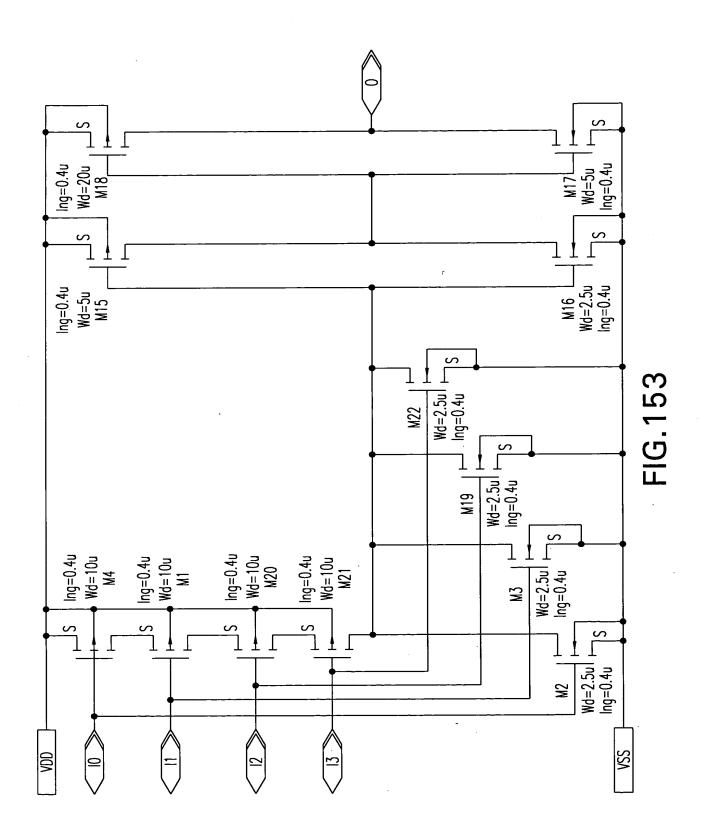
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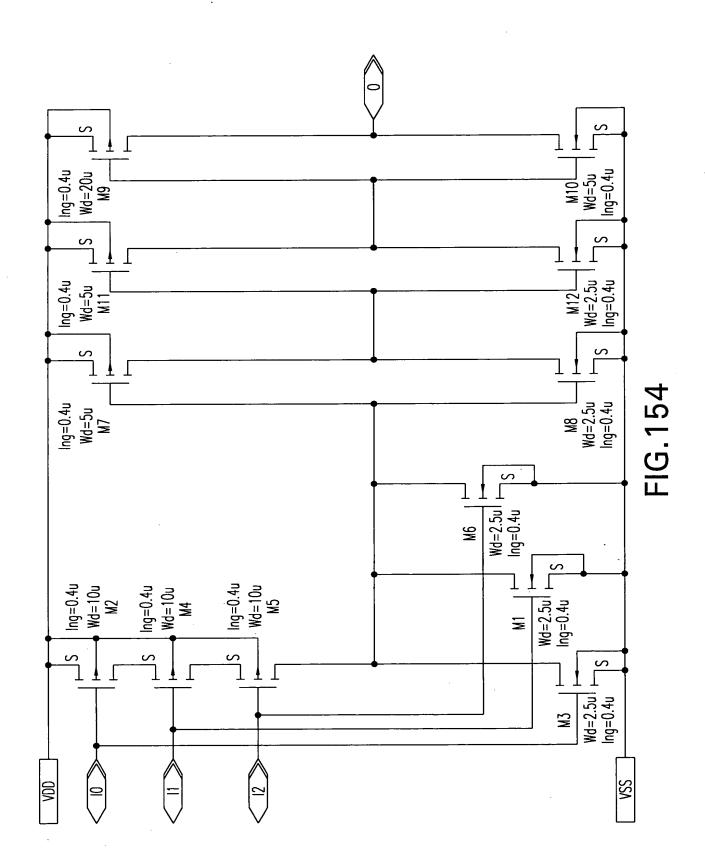
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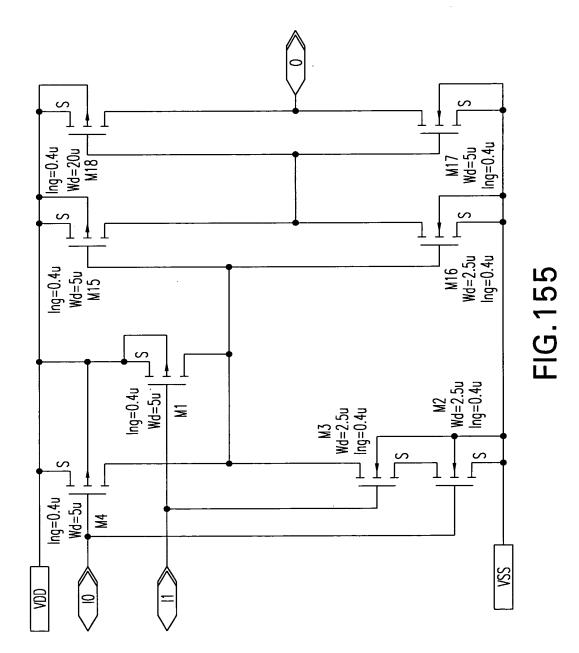
Inventors: Sorrells et al.
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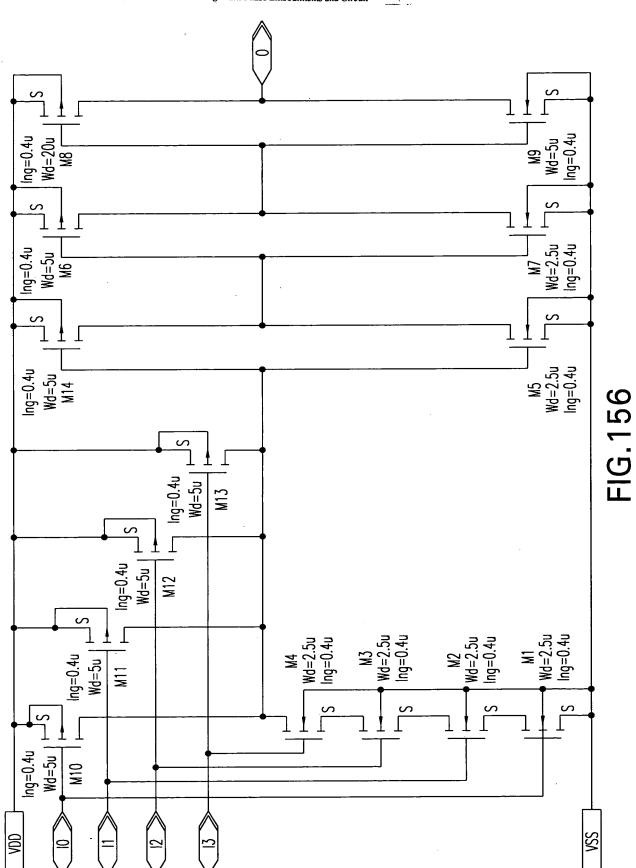
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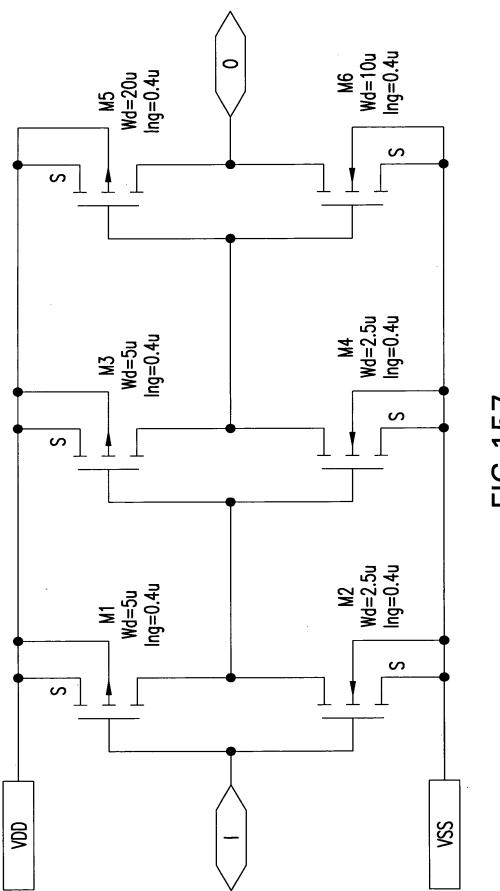
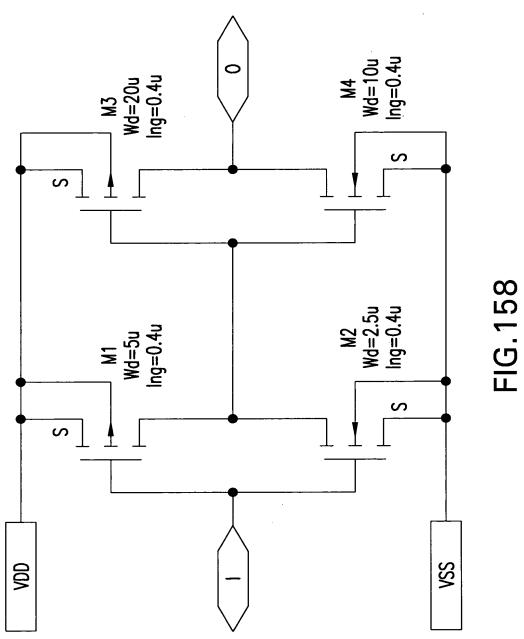


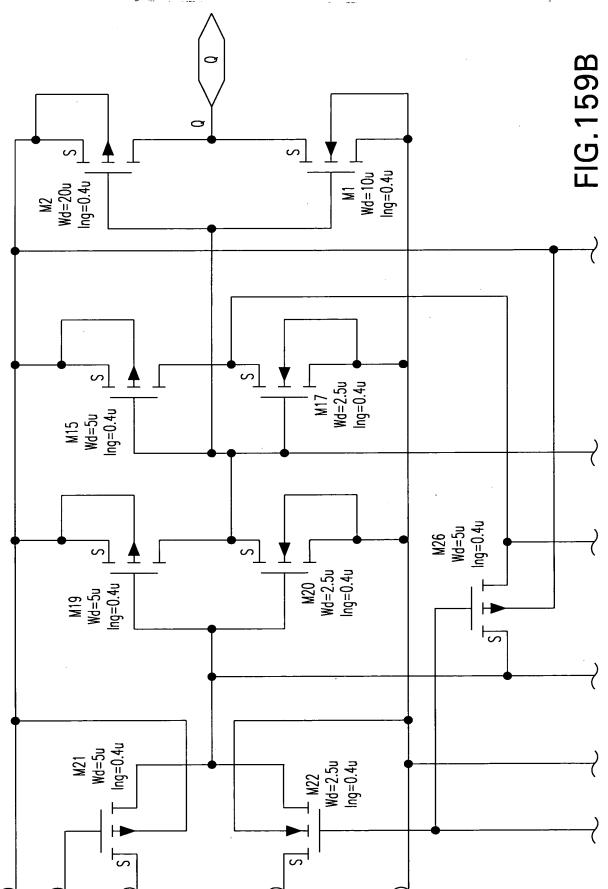
FIG.157

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Inventors: Sorrells et al.
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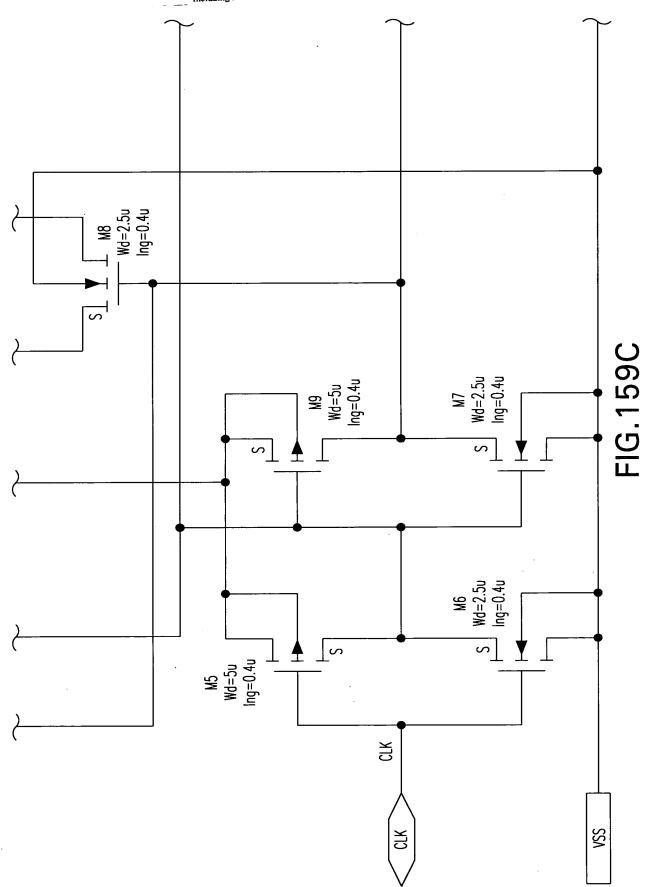


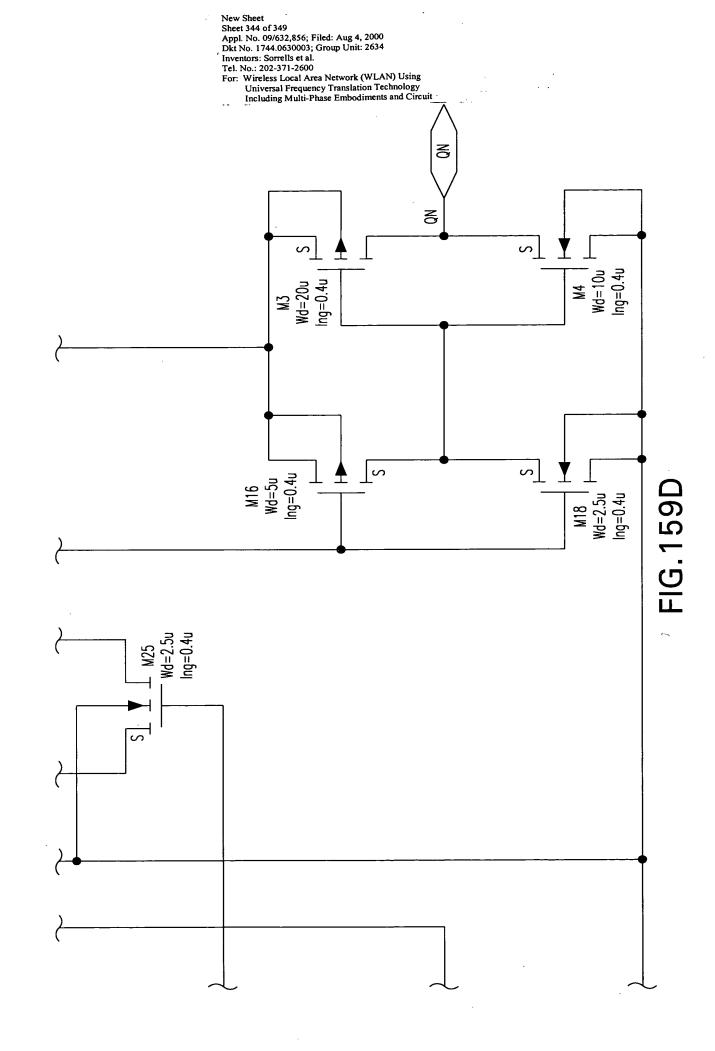
Replacement Sheet Sheet 341 of 349 Appl. No. 09/632,856; Filed: Aug 4, 2000 Dkt No. 1744.0630003; Group Unit: 2634 Inventors: Sorrells et al. Tel. No.: 202-371-2600
For: Wireless Local Area Network (WLAN) Using
Universal Frequency Translation Technology
Including Multi-Phase Embodiments and Circuit FIG. 159A M10 Wd=5u Ing=0.4u M14 | Wd=2.5u Ing=0.4u M12 Wd=5u Ing=0.4u S S M13 | Wd=2.5u Ing=0.4u M11 Wd=5u Ing=0.4u M23 Wd=5u Ing=0.4u M24 \_\_ Wd=2.5u Ing=0.4u S 9

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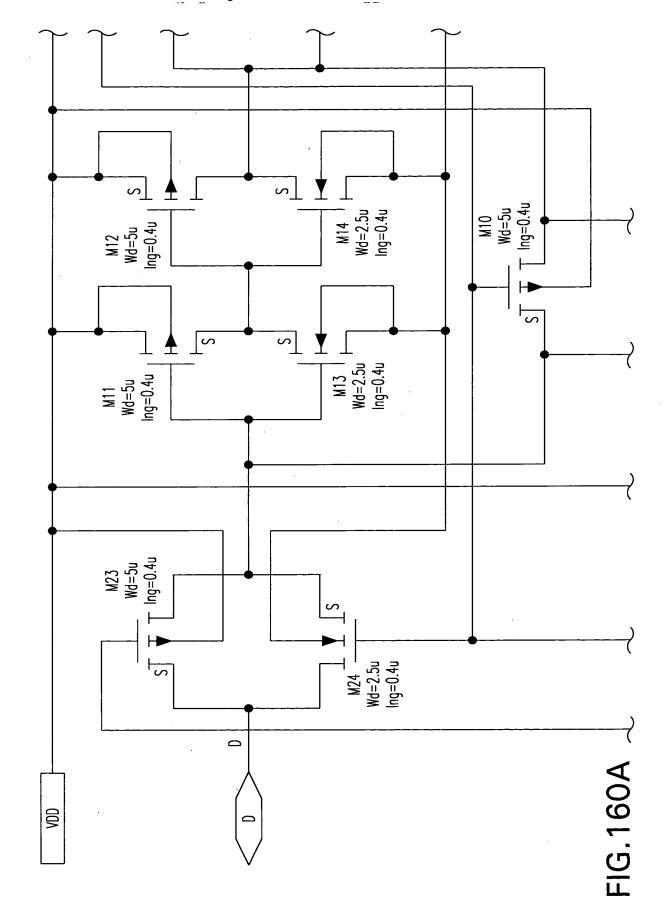
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Tre. 17-1-0030003; Group Unit: 2034

Inventors: Sorrells et al.

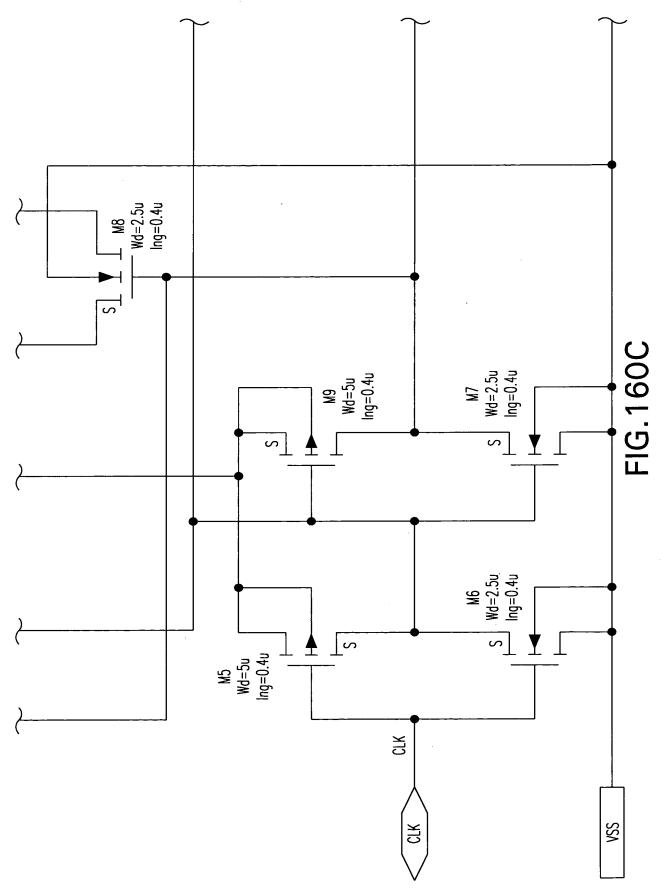
Tel. No.: 202-371-2600

For: Wireless Local Area Network (WLAN) Using Universal Frequency Translation Technology Including Multi-Phase Embodiments and Circuit

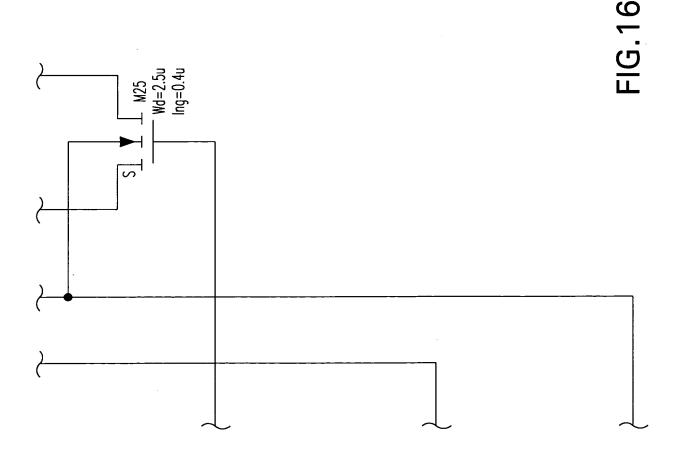


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For: Wireless Local Area Network (WLAN) Using
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Including Multi-Phase Embodiments and Circuit M1 | Wd=10u Ing=0.4u M2 Wd=20u Ing=0.4u FIG.160B M17 Wd=2.5u Ing=0.4u M15 Wd=5u Ing=0.4u M27 Wd=5u Ing=0.4u M20 <sup>†</sup> <sub>†</sub> Wd=2.5u Ing=0.4u M19 Wd=5u Ing=0.4u S M21 Wd=5u Ing=0.4u L M22 Wd=2.5u Ing=0.4u S

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